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TABLE OF CONTENTS

News Developments

Summary of Situation ... 35
Sparks From the News ... 36
Search for Petroleum Abroad Greatly Accelerated in 1937—By H. STANLEY NORMAN ... 37
Ickes Says Government Never for Oil Control—By NEIL WILLIAMS ... 38
Siliceous Lime in South Kansas Revives Interest—By DAL DALRYMPLE ... 39
March Crude Demand Estimate up 90,400 bbls. ... 40
Bryson Field Stages New Play—By L. E. BREDBERG 41
Inventory Requirements Estimated for Season—By FRED VAN COVERN ... 42
Clashing Views on Regulation at A. I. M. E.—By H. STANLEY NORMAN ... 43
Obituaries ... 44
Cabot Completes 118-mile System to Rochester—By J. P. O'DONNELL ... 45
Connally Opposition Overcome, New Patman Bills—By HENRY D. RALPH ... 49
News From Foreign Lands ... 50
Natural Gas News ... 52
Refinery Projects ... 52
Natural Gasoline ... 53
Pipe Line Work ... 53
Editorial ... 54
Oil Well Supply Co. Section ... 81-120

Engineering—Operating

Marshes Impede Laying of Coast Gas Line—By F. L. SINGLETON ... 56
Operating Ideas ... 57
Controlled Vertical Drilling Widely Used in California By T. P. Sanders ... 59
Perforated Casing Helps Maintain Production in Little Signal Hill—By DONUIL HILLIS ... 61
Progress in Metals—By W. L. NELSON ... 64
Oil Shales Gaining Commercial Importance in Central Europe—By M. RAUD ... 66
Oil Well Behavior Based Upon Subsurface Pressure Data—By H. C. MILLER, E. S. BURNETT and R. V. HIGGINS ... 69
Technical Questions—By C. K. FRANCIS, Ph. D. ... 76
Problems From Readers—By L. G. E. BIGNELL ... 78

Field Operations

Gulf Coast—By F. L. SINGLETON ... 201-205
Field Operations Summarized ... 203
Eastern Fields—By STAFF CORRESPONDENT ... 204
Rocky Mountain Area—By TOLBERT R. INGRAM ... 206
N. Louisiana-Arkansas—By MITCHELL TUCKER ... 210
Kansas—By DAL DALRYMPLE ... 212
Oklahoma—By DAL DALRYMPLE ... 216
Michigan—By PAUL ELLIOTT ... 220
Southwest Texas—By GEORGE WEBER ... 221
West and North Texas—By L. E. BREDBERG ... 222
California—By L. P. STOCKMAN ... 225
Central West—By GEORGE A. WHITNEY ... 226
Canada—By VICTOR LAURISTON ... 227
East Texas—By L. E. BREDBERG ... 228
Wildcat Operations ... 229 to 237

Markets and Prices

Crude Prices ... 238-239
Group 3 Market—By T. F. SMILEY ... 242
New York Market—By H. STANLEY NORMAN ... 243
A.P.I. Refinery Report ... 243
Tank-wagon Markets ... 244
Refinery Prices ... 245

Additional Features

Do You Remember? ... 240
Personal Paragraphs ... 240-241
Oil Man's Calendar ... 246
Classified Advertising ... 246-247
Index to Advertisers ... 248

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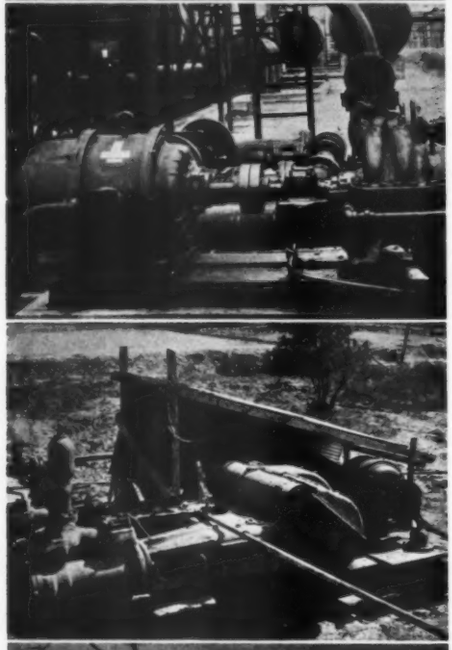

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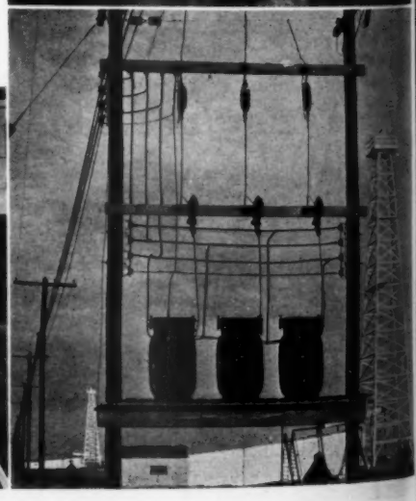


Crude Oil Producers Take Look Ahead

CRUDE production rose to another all-time high in the week ending February 20 in face of the fact that crude stocks have been increasing from week to week; but this is regarded as significant of a cautious mood, not of a return to unmindful overproduction. A conviction that proven fields contained plenty of oil to meet the demand of long years ahead created among producers a sense of security the sureness of which they are beginning to question. Large operators now are adopting a more conservative course than formerly. What if underground reserves should prove less abundant than pencil-and-paper calculations had made them seem? The thought has led to discontinuance of many crude sales on short-term commitments with a view of assuring ability to fulfill contracts covering a period of years. The oil thus retained is being stored as a measure of protecting long-term contracts. The shift in practice is believed to explain the trend toward accumulation revealed in current statistics.

The increase in daily crude production over that of the preceding week was 31,416 barrels. Texas was the largest contributor, with a gain of 12,155 barrels over its output for the week before. This was 133,070 barrels in excess of the Bureau of Mines recommended allowable, but 28,724 barrels less than the allowable which the state set up for itself. Oklahoma recorded a drop of 5,800 barrels, but it was 26,925 barrels beyond the bureau's allotment. Kansas added 10,275 barrels daily to its production of the preceding week and overshot the bureau's recommendation by 16,250 barrels. It was 1,668 barrels under its own state-fixed allowable, however. California's figure was 6,750 barrels below that of the week before, but 20,200 barrels above requirements as estimated by the Bureau of Mines. Louisiana's production rose 2,264 barrels, and it was 15,832 barrels in excess of the bureau's recommended allowable.

Production 3,298,531

Increase 31,416

In the marketing division the endeavor to effect a proper balance between gasoline prices and higher crude costs has not gained its objective. Refiners assert, with apparent justification, that current tankcar quotations are below the point at which they are able to make a reasonable profit. Some of them say they are making no effort to get business in the spot market, contenting themselves with taking care of contracts. In the meantime the gasoline they run to storage in the hope of getting a better price for it later is increasing the velocity with which gasoline stocks are rising. Whether these immense accumulations of motor fuel contain the seeds of trouble is believed to depend largely upon the length of time before favorable weather starts motor cars out upon the highway. Industries and railroads are hunting for heavy fuel oil.

Daily Average Production for Week

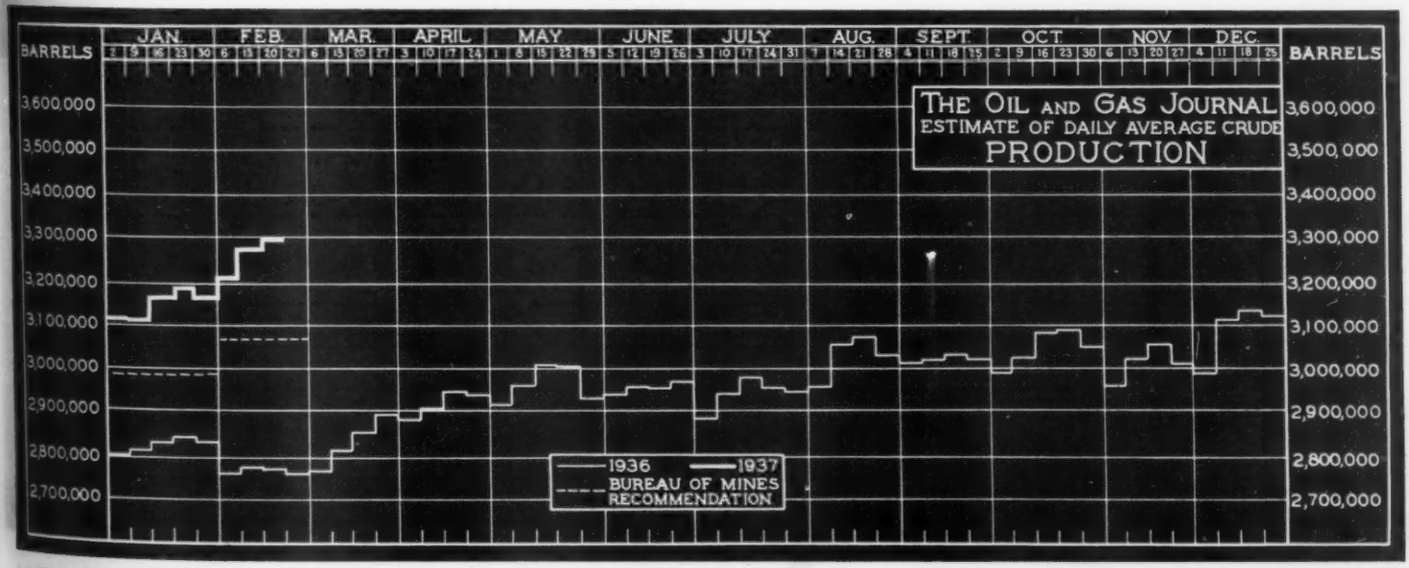
	Feb. 20, 1937	Bur. Mines Feb. est.	Feb. state allowable	Feb. 13, 1937
Oklahoma City	147,900	.....	.....	159,200
Seminole-St. Louis	89,675	.....	.....	85,925
Remainder of state	371,250	.....	.....	369,500
Total Oklahoma	608,825	581,900	581,900	614,625
East Texas	453,487	.....	.....	452,494
West Texas	190,485	.....	.....	189,396
North Central Texas	99,533	.....	.....	99,748
Texas Panhandle	72,497	.....	.....	71,593
East Central Texas	109,507	.....	.....	106,649
Gulf Coast Texas	303,397	.....	.....	299,948
Southwest Texas	107,564	.....	.....	104,487
Total Texas	1,336,470	1,203,400	1,365,194	1,324,315
North Louisiana	70,400	.....	.....	69,270
Gulf Coast Louisiana	170,532	.....	.....	169,398
Total Louisiana	240,932	225,100	235,700	238,668
Santa Fe Springs	43,700	.....	.....	45,000
Long Beach	61,250	.....	.....	62,600
Kettleman Hills	79,000	.....	.....	79,500
Remainder of state	402,800	.....	.....	406,400
Total California	586,750	573,300	*551,100	593,500
Kansas	186,250	170,000	187,918	175,975
Arkansas	27,370	28,500	.....	26,390
Eastern Fields	115,100	114,300	.....	114,000
Michigan	29,884	29,400	.....	29,762
Southeastern New Mexico	94,915	80,550	96,555	82,190
Rocky Mountain area	72,035	62,150	.....	67,690
Total United States	3,298,531	3,068,600	.....	3,267,115

*Recommendation of Central Committee of California Oil Producers.

Crude Oil Stocks in United States

(BUREAU OF MINES ESTIMATES)

Week ending February 6, 1937	286,116,000
Week ending January 30, 1937	285,384,000
Week ending February 8, 1936	312,622,000



SPARKS FROM THE NEWS

And an 8.27 increase in domestic gasoline demand this year on top of a 10.46 gain last year may be an underestimate.

Crude oil stocks under 267,000,000 barrels is quite a come down from the peak of 433,500,000 barrels in 1929 and probably below required working levels.

If the growing demand for residual fuel cannot be supplied without upsetting gasoline there will be an argument for more imports of fuel oil.

Oil burners have doubled since 1930. House heating oil demand has increased 21 per cent since 1932. No wonder it is a burning question.

Messrs. Ickes and Swanson could qualify as star witnesses on buying pools and their purpose.

New Kansas governor joins the procession with a demand for a gross production tax on oil. They learn fast.

More than $800,000,000 will be spent in 1937 for new military airplanes. These will require the best gasoline and a lot of it.

In terms of last year's consumption, motor fuel stocks now appear high. To the man who considers near future demands they seem reasonable.

Accelerated search for petroleum abroad may find a partial solution for the reserve problem.

The revised Guffey coal bill is on its way and "where it will stop nobody knows."

Mr. Oliver's query "Can the Rule of Capture Be Rationalized?" is still unanswered.

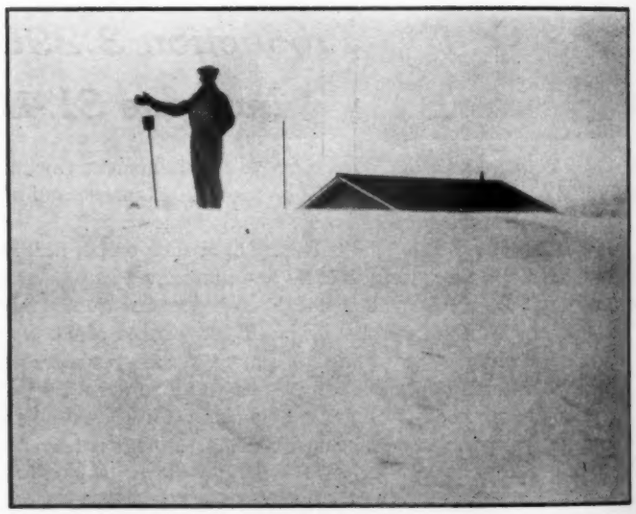
Furnace oil production schedules are established in spring for the following winter demands. Unusual optimism is now being based on this winter's experience.

If the federal government "has never been interested in control of the oil industry" what were all those threats about?

Price index of 35 important commodities is now within 10 per cent of 1926 level. But petroleum products are still 40 per cent shy.

Natural gasoline prices, for the first time this year, have pushed themselves above the corresponding level one year ago.

WAITING FOR CHINOOK



Pumper tunnels out of snow-buried lease house at Cut Bank. Warms his hands at 14-foot high flambeau

Kansas legislator proposes to stop gasoline tax leaks by repealing all exemptions. But will the farmers stand for it?

Government committee talks of compelling car manufacturers to limit speeds. But slow drivers would still cause accidents.

It is a Pennsylvania congressman who wants a tax on fuel oil. Pennsylvania is a great coal state.

Degassing station, Hanjira, Irak. Separator manifold pit to right

Search for Petroleum Abroad Greatly Accelerated in 1937

By H. STANLEY NORMAN

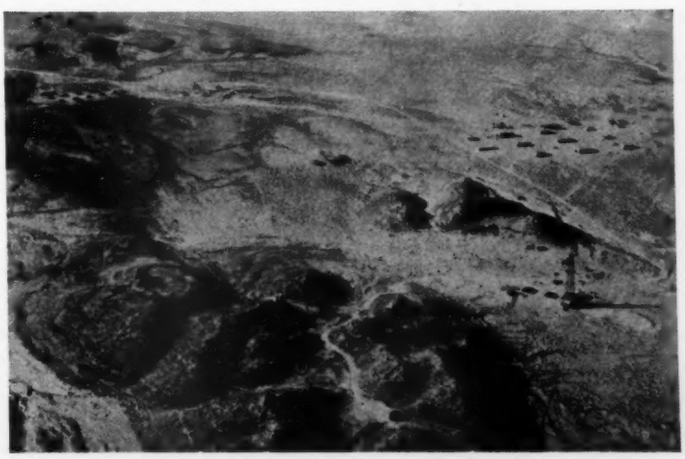
NEW YORK, Feb. 22.—That the search for new petroleum reserves outside the United States will be accelerated, with particular attention directed to South America and to areas surrounding the Persian Gulf, stood out in the annual foreign oil symposium at the American Institute of Mining and Metallurgical Engineers meeting here. Forecasts of more intensive exploration for the current year were made by the various authors, in many instances supported by activity now launched. While one of the most ambitious programs is in Russia, that country's internal consumption is growing so rapidly supply from that source to world markets is infinitesimal.

In nearly all other instances expansion of foreign exploration may have a distinct bearing on world supply and demand. Particularly active programs are expected in Venezuela and Colombia which appear, on the basis of projected programs, to offer the most attractive potentialities in South America. In general, however, the same indications of extensive exploratory programs apply to Peru, Argentina, Bolivia and Trinidad.

Much of the work in 1935 and 1936 in acquisition of concessions along the western shoreline of the Persian Gulf probably will be followed before 1937 expires with exploratory drilling. Establishment of production on the Saudi Arabia eastern shoreline along the Persian Gulf probably will be reduced to more commercial terms during the year. Two producing wells have been completed and shut in for lack of a present outlet. Five other tests reasonably near the two producers are in various stages of completion while a rank wildcat about 40 miles north, but still only a short distance west of the shoreline is still drilling. Thousands of acres are held along the Persian Gulf shoreline by subsidiaries of the Iraq Petroleum Co., which may be partially explored this year and next.

Furthermore, Anglo-Iranian Oil Co., Ltd., completed aerial photographic survey of approximately 5,000 square miles additional to its Iran concession in 1936 and this preliminary work likely will be followed by exploratory drilling this year. Although work is not expected to reach the drilling stage this year, Inland Exploration Co.'s large concession in Afghanistan and Armanian Oil Co.'s concession in northern Iran must be assigned relatively important positions in appraisals of the Persian Gulf district.

Probably the outstanding exception to the general tone of reports on foreign oil countries was Mexico. Predictions on Mexico's petroleum future were made contingent on relations between oil companies and labor which were unsatisfactory during 1936. Disputes between private companies and Mexican labor organizations were held responsible for the comparatively small increase in production in 1936 and were viewed as a possible deterrent to expansion this year. Venezuela's two labor strikes in 1936 cut that country's production approximately 5,750,000 bbls.



AERIAL SURVEY—*Dammam Camp of California Arabian Standard*

The symposium was conducted by James Terry Duce, New York, Texas Corp. Basil B. Zavoico, geologist, department of petroleum economics, Chase National Bank, calculated U.S.S.R. production for 1936 at 201,500,000 bbls., an increase of 9.4 per cent over 182,970,000 bbls.

Izberbash, east of Grozny on the Caspian Sea, was the most important discovery. At least half of the large indicated structure is submerged under the Caspian Sea, which Chairman Duce remarked is conveniently shrinking. The field has been assigned a quota of 7,500,000 bbls. of production for 1937. Achi-su, near Izberbash, is thought to cover an extensive area. Seven wells have been completed ranging in initial production from 70 to 200 bbls. each from an average depth of 2,400 feet. On the Apsheron Penin-

sula in Puta district new production was discovered or promising indications at Shangar, Kergeq and Kizil-Tepe. On the Saliani Steppe, south of Apsheron Peninsula, a major discovery was scored at Pirsagat with a second producer completed in October flowing 2,500 bbls. daily from 4,500 feet. A heaving shale problem in this area was reported overcome.

In the North Caucasus several small fields were added in the Maikop and Kuban districts. Those outstanding were Asphalt Mountain and Kutaiski in the Maikop district and Adagum and Keslerovo in the Kuban district.

Total footage drilled in U.S.S.R. in 1936 was reported at 6,694,000 feet, compared to 4,926,000 feet in 1935.

C. C. McDermond estimated production in Venezuela at 155,228,982 bbls., compared to 148,528,790 in 1935, an increase of 6,700,192 bbls. The shut downs in June and December are calculated to have reduced the total production by 5,750,000 bbls., although the actual was a new all-time record. Mr. Duce estimated over 300 wells will be drilled in 1937. Mene Grande Oil Co. (formerly Venezuelan Gulf) resumed drilling on its Lake Maracaibo properties and the company is reported planning to continue exploration until all available locations are drilled. Other Maracaibo companies are keeping apace in Lagunillas, La Rosa and elsewhere. There were 25 strings of tools engaged at the close of the year with 10 in service in eastern Venezuela fields and on wildcat locations. Wildcat drilling in 1937 is expected to far overshadow last year's work.

In Bolivia Dr. Jorge Munoz Reyes and Guillermo Mariaca reported that Yacimientos Petroliferos Fiscales Volivianos was formed in 1936 as an official entity to develop and explore an assigned area covering all of the sub-Andean zone. The area extends from Argentine to Peru, 100 miles wide, bordering the eastern part of the Oriental Andean range. Geological surveys are now being made and the Y.P.F.B. is authorized to develop the property through contracts with private companies. Standard Oil Co. of Bolivia was the only producer in 1936. From the Camiri field, production was estimated at 5,750,000 bbls. and from the Sanandita field at 7,450,000 bbls.

NEW DRILLING IN PERU

O. B. Hopkins, geologist for International Petroleum Co., reported production from Peru reached an all-time record of 17,594,689 bbls., an increase of 530,288 bbls. International's production from the La Brea-Parinas estate totaled 15,126,491 bbls., and Lobitos Oilfields, Ltd., produced 2,418,198 bbls. From the El Alto part of the Lobitos producing area, a new district north of the older production, the 1936 output was nearly double that of 1935 and particularly encouraging results were attained by new drilling. There were 43 new completions in the La Brea-Parinas field and 22 old wells were deepened. Rotary drilling gained further favor during the year, although a majority of work is still carried on with cable tools.

O. C. Wheeler, Tropical Oil Co. ,geologist Colombia, said intense geological and geophysical research launched by the Royal Dutch-Shell group in the upper Magdalena Valley supplemented by an extensive aerial photographic survey was an outstanding development last year. This work is continuing and the company is understood to have acquired options and leases in the upper valley and in the western part of Cundinamarca. Socony-Vacuum has spudded its test on the Senor Luciano Restropo concession north of the Sogamoso River. Richmond Petroleum Co., Standard of California operating unit, has resumed its geological survey work in the upper Magdalena Valley north of Handa.

Sociedad National del Carare has been granted a concession on nationally owned reserve land between Carare and Magdalena rivers and since then an agreement has been reached for joint development with Tropical Oil Co. Colombia's production totaled 18,756,109 bbls., including 272,385 bbls. of petroleum condensate. Upper sands, designated as B-zone, in Infantas and La Cira fields were exposed to production by adoption of the gun perforation method.

The 23-year-old Hurghada field remains the only active producing area in Egypt. Production for 1936 totaled 1,222,200 bbls., compared to 1,215,600 bbls. in 1935. All of the field's 76 producers are pumping and three new wells were completed in 1936 and three failures were drilled. Considerable acreage is held under concessions along the eastern shoreline of the Red Sea which may come under active development this year.

J. O. Nomland, Standard Oil Co. of California, reported about six strings of tools were continuously engaged on Bahrein Island throughout the year building up potential to 250,000 bbls. per day. At the end of 1936 production was averaging about 20,000 bbls. daily and will be increased when additional refinery capacity is completed at mid-year. For 1936, Bahrein Island's production totaled 4,644,635 bbls., more than 1,000,000 bbls. higher than earlier estimates.

OUTPUT IN IRAN

M. R. Bridgeman, Anglo-Iranian Oil Co., said small reservoir pressure decline in Iran was maintained at about 1 pound per square inch annually, although production totaled 61,980,000 bbls. for 1936, compared to 56,990,000 bbls. in 1935. Hydrochloric acid was used extensively in Iran last year. Normal practice consists of three injections of 500 gallons of 100 per cent diluted commercial acid. Flowing life of many wells was sustained by the acid treating practice. The drilling program in the Haft Kel field is complete and only routine developments were reported in the Naft-I-Shah field. About 5,000 square miles of unexplored territory was covered by aerial photography.

L. Dudley Stamp, University of London, said the possibility of opening important new fields in Burma is becoming increasingly remote. The southern extension across lateral faults in the Yenangyaung field has become British Burma Petroleum Co. and Burma Oil Co.'s chief reserve. The Singu field remains Burma's richest with the southern extension receiving considerable attention. The problem of recovering oil under the Irrawaddy River in the Lanywa field is receiving study with two plans considered. One is directional drilling and the other is excavation of a tunnel below the river deep enough to accomodate derricks. The artificial sand bank is being extended and now is more than two miles in length enabling operators to carry on upland drilling in areas either totally or partially submerged along the river banks.

Three small areas in Cuba produce limited amounts of oil from serpentine at depths between 500 and 1,500 feet. The Bacucanao area, 12 miles east of Havana, has 15 producing wells ranging in initial from a few barrels to 100 bbls. daily.

In Mexico V. H. Garfias reported increased production from the Poza Rica field to 13,417,000 bbls. in 1936 from 9,468,000 bbls. in 1935. Production declined in the older fields as companies ceased new exploration due to uncertainties over labor relations and also over Mexico's expropriation legislation. Mr. Garfias reported the country's 1936 production at 40,309,000 bbls. Northeastern Mexico, across from the Rio Grande Valley, producing districts in Texas, is conceded to offer interesting possibilities.

Ickes Says Government Never for Oil Control

By NEIL WILLIAMS

AUSTIN, Tex., Feb. 22. — "The federal government never has been interested in the control of the oil industry, but rather has been concerned only with helping the states to enforcement of their own oil regulatory measures."

This was the statement of Secretary Ickes, at the monthly statewide oil and gas proration hearing here Saturday. He was an unexpected visitor at the hearing attended by operators and company representatives from all parts of Texas.

Mr. Ickes declared the federal government's attitude has been misunderstood. The purpose of the government, he said, is to do what is necessary to assist the oil men to recover the maximum amount of oil from their wells and get the highest possible price.

Producers ought to be concerned with increasing the flowing life of their wells by conservation of pressures and reservoir energies, rather than trying to get a large immediate production, Mr. Ickes continued.

Indicative of such benefits and the success of efforts to control production and conserve resources, Mr. Ickes said, that due to production control, operators now expect to recover 600,000,000 bbls. more from the East Texas field than was estimated in 1933.

Oil regulatory laws of the states are entirely adequate Mr. Ickes said, and the government will continue to assist the states in the enforcement of these laws so the industry can be kept on an even keel.

Mr. Ickes believes the industry as a whole is facing an extremely favorable outlook. Oil prices are going higher, not down, he predicted.

Another highlight of the hearing was Commissioner E. O. Thompson's request that every large company marketing gasoline in Texas provide the Railroad Commission with an affidavit, signed by the president of the company, explaining why the price of gasoline had been boosted in greater proportion than the price of oil in recent market raises.

Questioning concerning the gasoline price advance in the Panhandle, Colonel Thompson's home, revealed that from a barrel of Panhandle crude 25 gallons of gasoline are recovered. This, on the basis of 1 cent a gallon, represents an increase of 25 cents a barrel, while the price of Panhandle crude was raised only 10 cents.

Colonel Thompson said that in addition to production control, the Railroad Commission is charged with protecting the gasoline consuming public.

The Bureau of Mines estimates the March demand for Texas crude at 1,256,000 bbls. daily, an increase of 52,600 bbls. over February.

Current daily production of Texas, based on the allowable of February 19, is 109,194 bbls. greater than the bureau estimate. Market demand for Texas during March, reflected by nominations by purchasing companies, is 309,231 bbls. greater than the bureau estimate, and 200,037 bbls. over the current allowable.

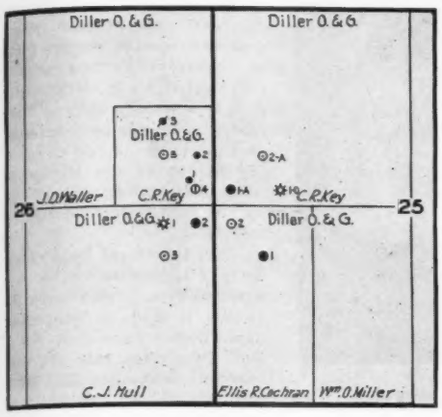
Colonel Thompson in response to Secretary Ickes, declared the industry at last has arrived at the happy economic balance in which current demand is being supplied by current production.

Average bottom-hole pressure in the East Texas field on February 12 was 1,170.82 pounds, V. C. Cottingham, director of production for the Railroad Commission, reported, a decrease of 5.65 pounds from January 12, the decrease per 1,000,000 bbls. being only .405 pound.

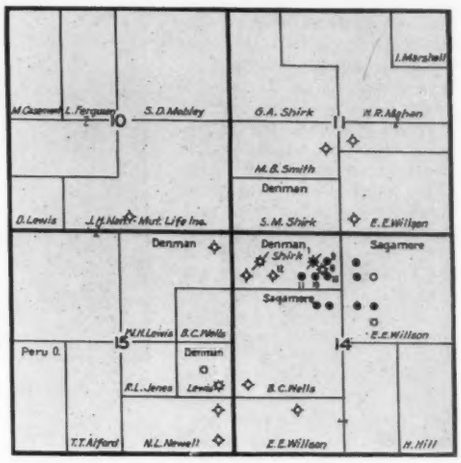
Siliceous Lime in South Kansas

Reviving Interest

By DAL DALRYMPLE



The Key Pool



The Monett Pool

Old oil and gas fields are athrob with new activity and virgin areas are being explored by oil men seeking the deeper pay zones thought to underlie many of the shallow pools of Elk and Chautauqua counties in southeastern Kansas. Prolific Siliceous lime production, found when an old well was deepened late in December, 1935, was the tonic that gave new life to the old areas and revived interest in these long dormant fields.

Four Siliceous lime pools were opened in the two-county district the past year. Several wells were completed in each pool, with estimates of potential production ranging from 1,000 to 2,500 bbls. of oil per well. Low drilling costs and a ready market spurred activity. The result was that in 1936 the scope of operations increased to an extent comparable with the activity when the shallow pools of these counties were being developed many years ago.

The outlook for 1937 is bright, indeed. Local producers—the men who remained in the stripper districts of southeastern Kansas despite the allure of gusher wells and more sensational fields elsewhere—have been responsible for most of the new development. They have much of the desirable acreage under lease and plan extensive development work this year.

Indications are, however, they will not have the field to themselves. Major companies who long have ignored the stripper districts are looking toward Chautauqua and Elk counties again. Reports of big Siliceous lime wells, coupled with the need for new reserves, have persuaded some of the big companies that this old sector is worthy of their attention. Some of the majors are scouting this district for the first time in years. New independent operators are entering the field. One of the more successful independent operators of Oklahoma bought acreage in the two-county area last week and is expected to start developments of his tracts this year. Two former governors, A. M. Landon of Kansas and O. A. Eberhart of Minnesota, are among those interested in the new oil play.

The little town of Moline, hub of the activity in southern Elk County and northern Chautauqua County, is rapidly becoming a rendezvous for oil men. Several of the independent operators active in the district have their headquarters there. A few weeks ago the first oil field supply store serving that area direct was opened at Moline. Sedan, Chautauqua County seat, is sharing in the revival of activity.

The inspiration for this new activity was provided in December, 1935, when Griffin & Bell deepened their No. 3 Julian, an old gas well in NE cor. section 2-32-10e, from the top of the Mississippi lime to the Siliceous lime. They were rewarded with a producer estimated good for 1,000 bbls. of oil daily.

The Siliceous lime production in this area, known as the Oliver pool, is in sections 1 and 2-32-10e. Shallow production has been obtained from the Oswego and Kansas City horizons in sections 2 and 12-32-11e for more than 10 years. Griffin & Bell now have six Siliceous lime producers in the pool, in addition to some 18 to 20 wells producing from upper pay zones.

The Oliver pool is in northern Chautauqua County, 5 miles south of Moline in Elk County. Between it and Moline is the Key pool, another Siliceous lime area opened in 1936, in sections 25 and 26-31-10e, southern Elk County.

The Key pool was opened and is being developed by the Diller Oil & Gas Corp., of Moline, which owns all acreage immediately surrounding production. The third Siliceous lime well in the pool was completed a few weeks ago at No. 2 Hull, NE NE SE section 26-31-10, for an estimated natural production of 2,000 bbls. of oil daily. It was bottomed at 2,283 feet in top of the Siliceous. The three Siliceous lime wells on the Diller company's lease have a total estimated potential of about 5,500 bbls. daily. All produce naturally, none having been acidized. David H. Morgan, president of the Diller Corp., explained the method of drilling in these Siliceous wells.

"We complete the Siliceous lime wells by just breaking the caprock, which seems to lie immediately above the pay," said Mr. Morgan. "The caprock varies from 6 inches to 2 feet in thickness and is very hard. As soon as it is drilled through, the tools simply swing in the hole and we pull them out at once. The wells then fill up to within 25 feet of the top of the ground, where they simply stand and no amount of pumping will lower the amount of fluid in the hole. The wells fill up with oil in from 40 minutes to 2½ hours. We have not been able to obtain a good sample of the pay formation yet owing to the rapid fill-up, but it generally is conceded to be Siliceous."

The fluid is a dark green oil of 28 to 30 gravity at 60°. It has a high-grade lube base with paraffin reactions.

The Sagamore Oil Co. also has completed six Siliceous producers in the Monett pool, all in section 14-33-12. One of their recent completions was opened for three hours, producing 65 bbls. of oil an hour, through 2-inch pipe. The company, operating subsidiary of Union Gas Co., has two other wells drilling and plans more development of the area. Denman Brothers are drilling a test in section 15-33-12. They are not anticipating Siliceous production, but believe pay will be found in Peru sand, heretofore the principal producing horizon in many of the old Chautauqua County fields.

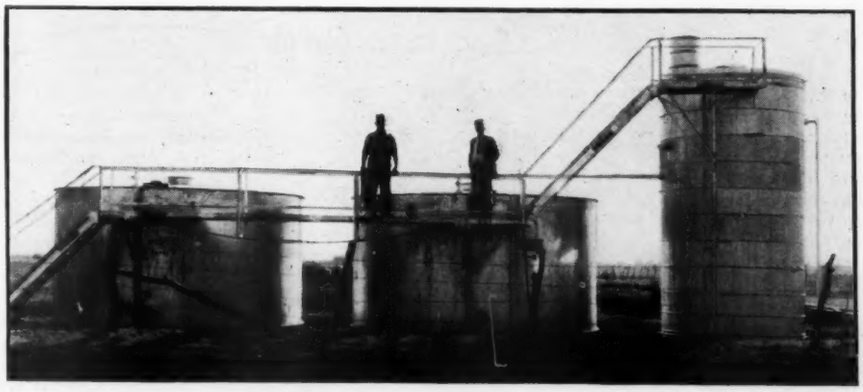
The Monett pool, northeast of Sedan, is in an old gas area opened in 1925 in a sector where numerous dry holes have been drilled. Gas is found in top of Mississippi lime at around 1,550-1,650 feet.

The Shambough pool, in the northwestern corner of Elk County, is the fourth new Siliceous lime area now being developed in the two-county district. It was opened in 1936 after several dry holes had been drilled in the area, and now has four producers and one well drilling below 1,700 feet. The Siliceous is found at around 2,860-2,900 feet. The Clay Petroleum Co. is developing this area.

None of the Siliceous lime wells in these new pools has been given potential tests, production being estimated on rate of fill-up. The wells are not swabbed or acidized, operators fearing these methods will bring water faster than oil. The oil is produced through one-fourth inch choke, in compliance with Corporation Commission records. The wells are shut in to 50 bbls. daily, through voluntary agreement of operators. It is thought that because of this careful treatment and small daily production the Siliceous wells will have long productive lives.

Operations, other than Siliceous lime tests, also are increasing in various areas of Elk and Chautauqua counties.

Late in January, Sagamore Oil Co. completed a



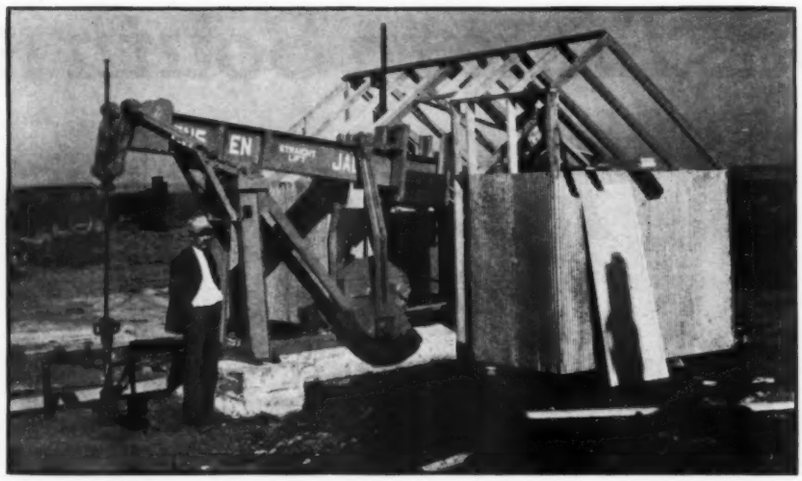
Storage tanks for new Siliceous lime pool in Elk County, Kansas

big gasser in an area on the Kingston lease in Chautauqua County, about 9 miles southeast of Moline and 10 miles northwest of Sedan. It stopped in top of Oswego lime at 1,440 feet and produced nearly 5,000,000 feet of gas daily. It is the largest well in an area that has been producing gas for several years, but from deeper pay.

Elk County appears due for the greatest oil exploration campaign in its history. While Chautauqua County has had much oil production from various shallow formations in the past, the great majority of Elk County tests found gas rather than oil, if not dry. Operators now are looking toward these old gas areas for future oil development.

Formations found in the Key pool are: Encil sand at 1,135 feet; Lansing, with gas pay, 1,220 feet; Kansas City lime, with oil pay, 1,350 feet; Peru sand, oil pay, 1,530-75 feet; Oswego lime, oil pay, 1,647-74 feet; gas pay in top of Mississippi lime, 1,980-90 feet; oil in the first break of the Mississippi lime, 2,010-25 feet, and the Siliceous lime pay at around 2,255-85 feet.

One of the accompanying maps shows the status of the Key pool. The large black dots are Siliceous lime wells. The small black dots are Oswego lime producers. Circles around dots are locations to be drilled to the Siliceous. No. 4 Key, SE SE NE section 26, was drilling at 1,500 feet at last report, and was reported running higher structurally than a producer offsetting it on the south. No. 3 Key, at northwest edge of the pool, was not completed as a producer but had oil showing in top of the Mississippi lime. Two other wells shown on the map were completed as gassers.



Type of pumping jack used in the Key pool. David H. Morgan, producer, standing by.

Saco Oil Co. of Eldorado is drilling contractor for the Diller Corp. Rapid progress usually is made in completing these wells. Record of No. 2 Hull illustrates this. It was spudded December 29, 1936, and by January 20 the Saco crews had drilled 2,267 feet of hole, run five strings of pipe, cemented the last string of 5-inch casing, and had pulled all of the big pipe and 2,009 feet of the 6-inch establishing a cable tool record of the area for 21 days, net.

Siliceous production was found in the Monett pool, Chautauqua County, by Denman Brothers of Sedan when they completed No. 1 Shirk, NW section 14-33-12e, last April. It stopped at 1,790 feet, in top of the Siliceous, the hole filled with oil in three hours and its potential production was rated at 370 bbls. daily. The Denmans now have five Siliceous lime producers in the Monett pool, their No. 11 Shirk, NE section 14-33-12, recent completion, being one of the best producers. It filled up with oil in 45 minutes and was estimated good for from 1,500 to 2,000 bbls. daily.

W. H. Jones, veteran operator and driller of Moline, is authority for the statement that "Elk County got a black eye in the opinion of the oil fraternity years ago. A preponderance of gas and little oil in the shallow sands, caused many of the oil men to say this county was no good for their business, and they went elsewhere. Hence, Elk County hasn't been explored for oil as intensely as the neighboring counties." He believes a new era is at hand and that Elk County now is set for its biggest oil play in 20 years.

"There are many old gas highs in this county that never have been penetrated below the average 1,500-foot gas level," Mr. Jones said. "Now, with profitable Siliceous lime production proven in some sectors, indications are that many of these gas highs will be drilled to the Siliceous in quest of oil. Drilling costs are low, a Siliceous well can be completed in from 25 to 30 days, and pipe line connections and a market are ready at hand. The recent Siliceous discoveries have given this area new life, and many deep tests will be drilled this year. The revival also will affect shallow drilling, with new tests being drilled to the Mississippi, Kansas City, Oswego and other horizons."

It is not unlikely a Siliceous lime test will be drilled on the Moline townsite before many months. The shallow Moline pool was developed in 1927-28, wells on the townsite having flush production of 200 to 300 bbls. each from top of Mississippi lime at around 2,000 feet. Production declined to around 2 to 5 bbls. each. Acid treatment than became popular, the old Moline wells were acidized and production was increased for a time, in some instances to as high as 100 bbls.

Now, the Moline citizens are enthused over the discovery of Siliceous production nearby. They are hoping some oil company will drill a Siliceous test on the townsite. If this is not done ere long, it is probable some resident will rig up a machine and start work on a deep test in his own back yard.

March Crude Oil Demand 90,400 Barrels More

The daily average production of crude oil for March, 1937, estimated by the Bureau of Mines to meet the demand, is 3,159,000 bbls., or 90,400 bbls. higher than the estimate for February and 420,100 bbls. (15 per cent) higher than the estimate of a year ago.

During the four weeks (January 9 to February 6) the production of crude averaged 3,220,000 bbls. daily, stocks of domestic crude declined at the rate of 7,000 bbls. daily, indicating a total demand of 3,227,000 bbls. The period witnessed a reversal in the trend of crude stocks from one of declines to one of increases and a continued accumulation in gasoline stocks in excess of the estimates made by the bureau.

Domestic Demand—The domestic demand for motor fuel in March has been estimated as 39,100,000 bbls., or 9 per cent above the actual of March 1936. Domestic demand for 1936 showed an increase of 10.8 per cent over 1935, which was due partially to the large increase in motor vehicle registrations (from 26,200,000 to 28,200,000) and partly to the continued upward trend of motor fuel demand per motor vehicle.

Exports—Exports of motor fuel for March have been estimated at 2,300,000 bbls., or 100,000 bbls. more than the estimate for February and 700,000 bbls. more than the abnormally low figure of March, 1936.

Stocks—Stocks of finished and unfinished gasoline on December 31 amounted to 62,885,000 bbls., an increase of 4,086,000 bbls. during the month. According to the American Petroleum Institute, stocks were further increased during January by about 6,000,000 bbls., making motor fuel stocks on January 31 close to 69,000,000 bbls., compared with 62,754,000 bbls. on the same date in 1936. An increase of 3,100,000 bbls. has been anticipated for March of this year, which, if realized, will bring stocks up to about 72,000,000 bbls.

Gasoline Production—Benzol and direct sales and losses of natural gasoline have been estimated as 850,000 bbls., making the estimated production of gasoline 43,650,000 bbls., which is distributed among the districts as follows (thousands of barrels): East Coast, 6,510; Appalachian, 1,590; Indiana-Illinois, 7,430; Oklahoma, 2,750; Kansas-Missouri, 2,620; Texas Inland, 3,490; Texas Gulf, 9,690; Louisiana Gulf, 1,650; North Louisiana-Arkansas, 920; Rocky Mountain, 950; California, 6,050.

Runs to Stills—Natural gasoline consumption at refineries is estimated as 6.1 per cent of the total gasoline required, or 2,660,000 bbls. The yield of straightrun and cracked gasoline is estimated as 43.59 per cent, an increase of about 0.55 per cent over the February estimate. The application of this yield to the estimated straightrun and cracked production of 40,990,000 bbls. gives 94,030,000 bbls. as the crude required at refineries.

Imports—Runs of foreign crude have been estimated as 2,900,000 bbls., which, on a daily average basis, is slightly lower than that for February.

Exports, Fuel, and Losses—Exports of crude have been estimated as 4,000,000 bbls., "fuel and losses" as 2,800,000 bbls.

Required Production—The application of the usual methods to the total required production of crude oil gives the following breakdown by states:

TABLE 1—RECOMMENDARY LEVELS OF REQUIRED CRUDE OIL PRODUCTION BY STATES*

(Daily averages in barrels)

State—	Forecast— March, 1937	Forecast— Feb., 1937	Actual prod., Dec., 1936
Texas	1,256,600	1,203,400	1,229,000
Oklahoma	590,700	581,900	605,400
California	570,900	573,300	583,800
Louisiana	240,000	225,100	235,500
Kansas	178,000	170,000	173,900
New Mexico	88,200	81,600	87,000
Pennsylvania	49,000	49,400	49,500
Wyoming	43,200	41,900	45,000
Michigan	30,300	29,400	27,300
Arkansas	28,500	28,500	26,700
Kentucky	16,500	16,300	15,900
Montana	14,600	14,700	16,700
New York	13,500	13,000	14,400
Illinois	12,900	12,700	12,500
Ohio	10,300	10,500	10,400
West Virginia	10,300	10,200	11,000
Colorado	4,300	4,500	3,800
Indiana	2,200	2,200	2,300
Total	3,159,000	3,068,600	3,150,100

*The recommendations in this table have been calculated as the requirements for the months stated and are not intended to be calculations of daily average demand for the current year or for any period other than the months stated.

AUSTIN, Tex.—Filing of 37 suits seeking confiscation of 1,732,311 bbls. of crude allegedly produced in excess of allowables was announced by Attorney General William McCraw and Chairman C. V. Terrell of the Railroad Commission.

Bryson Field Stages Play Greater Than the Original

By L. E. BREDBERG

FORT WORTH, Tex.—The Bryson field in Jack County is staging a comeback greater than the boom 11 years ago when Frank Buttram drilled in the first well.

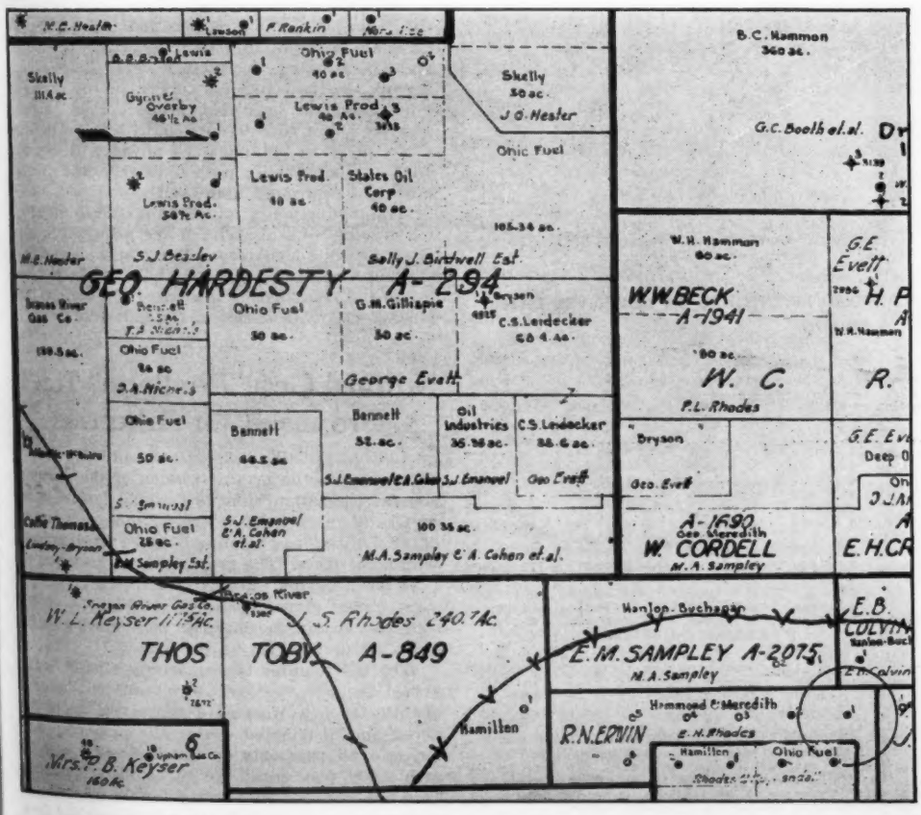
This new boom was opened last year by Frank T. Connor, president of Oil Industries, Inc., of Fort Worth, and Gwynn & Overby, who drilled in their discovery well on the Beezley farm, in the G. Hardesty Survey, about 2½ miles southeast of Bryson. It topped the sand at 2,954 feet and was completed 32 feet in the pay, making better than 700 bbls. of 43 gravity oil in 24 hours, a far better well than the usual run of wells completed years before.

Leases, especially in the newly opened part, are held entirely by independent operators. The leases are, for the most part, small, which has caused rapid development of the new section. The Rock Island Railroad leased its right of way for drilling, having two producers, with two more to be put down which will call for offsets on each side of the right of way.

Close spacing of wells, especially on the smaller tracts, may be costly to operators as pressures are diminishing, some operators not abiding by the 10-acre spacing rule. The Strawn sand is especially porous and yields its production readily, and is of different texture than wells in the East Texas field where some of the Bryson operators have been operating, they being inexperienced in drilling Strawn sand wells.

Over 2,500 acres have been proven in the new area, which is being extended from time to time. Two tests drilled near the center of the field, missed the sand lens, offsets however, making producers, illustrating the treacherous nature of sand conditions.

Hammon & Meredith moved about 2 miles southeast of the new area and opened what remains a separate field, getting the pay at around 2,400 feet, but in the upper horizon of the same series struck in the main part of the field. There are 12 producers in this separate area, with other tests drilling, the operators drilling twin wells, seeking production from the 2,400-foot sand and also the 3,000-foot or deeper pay horizon which is the main pay in the main part of the field. The shallower pay is also struck in the main field, but it does not pay off or have the potentials the deeper pay does.



Large arrow marks discovery of new part of Bryson field. Circle marks discovery of higher horizon of the Strawn series.—(Zingery Oil Map Co., Fort Worth)

Frank T. Connor, president of Oil Industries, Inc. which with Gwynn & Overby, opened the new horizon

Formerly cable tools were used exclusively, but rotaries are now used in drilling to approximately the top of the oil sand where 7-inch or 5⅞-inch pipe is set, then spudders or other machines are moved in to drill into the sand and for completing, 2-inch or 2½-inch tubing being run in the hole. There is a difference of 50 to 100 feet between the two main sand bodies, and some operators consider it good practice to perforate the pipe in the upper sand which allows the wells to be produced from both horizons.

The average potentials are between 350 and 450 bbls., most of them flowing, with only two on the pump in the northern part of the field although a number are on the pump in the southern or first opened part.

It costs around $8,000 to drill the wells, the average cost for a completed well running around $14,000. Digging is hard, from 8 to 11 rock bits being used, drilling time averaging 10 days. Drilling water has been scarce, tanks being relied on. Gas from old producers is used for fuel for steam rigs. The new producers did average from 1,500,000 to 4,000,000 feet of gas with the oil but this gas is being preserved as much as possible to produce the wells, although it is decreasing as more wells are drilled.

The top allowable is 65 bbls. per day, figured on the marginal well basis of 20 bbls. per day plus 10 per cent of their potentials. The oil is bringing $1.20 per barrel, runs from 41 to 44 gravity and has a high gasoline content, being light yellowish green in color. Continental Oil Co. and Texas Pipe Line Co. purchase the oil. Fifteen wells are now being drilled, with over 125 on production in the year-old part of the field.

At least a dozen wildcats are to be spudded in the county in the near future, looking for production from the Strawn series, and no doubt a large number will be put down this year.

Geologists to Meet in Moscow

The seventeenth International Geological Congress will be held at Moscow, July 20. Papers will be read on coal and petroleum and other phases of mining research.

A special group will be organized to visit the oil districts in the Caucasus. Tours have also been arranged to Magnetogorsk and other metallurgical and mining centers. Special trips to Siberia, to the newly developed regions in the Arctic, and the Donetz basin have been organized.

Inventory Requirements Estimated Over Season

By FRED VAN COVERN
Director, Department of Statistics,
American Petroleum Institute

—Blank & Stotler
FRED VAN COVERN

The year 1936 closed with about 62,900,000 bbls. of finished and unfinished gasoline in storage, about 6,000,000 bbls. more than at the end of 1935. On March 31, 1936, we had in storage 74,485,000 bbls. What will we have on hand on March 31, 1937, and how much do we actually need in storage as of that date?

The Planning and Coordination Committee during the code period attempted to ascertain how much gasoline the industry actually needed to carry on its business. Starting with that as a base and attempting to bring the figures up to date the estimated required working stocks of finished and unfinished gasoline as of the dates indicated are shown in Table 1.

***A. I. M. E.*—Extracted from paper before New York meeting**

The next question is: How much does the industry need at the beginning of the next high-consuming season, say, on March 31, 1937?

Table 2 presents a method of approximate calculation of that figure as well as a seasonal range of the inventory requirements of the entire industry.

The question arises whether a possible 78,000,000 bbls. actually in storage at the end of the winter, in relation to a possible indicated requirement of about 73,500,000, taken in conjunction with an expected increase in motor fuel demand of over 8 per cent and perhaps 280,000,000 bbls. of crude in storage above ground, is any greater threat to stability than the 74,500,000 bbls. of gasoline in storage on March 31, 1936, in relation to a possible minimum requirement at that time of 70,000,000 and 315,000,000 bbls. of crude inventory; proration of crude oil production assumed as being equal.

It would, of course, be difficult to defend the position that 78,000,000 bbls. would not contain a surplus. However, it would appear that relatively it would contain very little more or less than last year's 74,500,000 bbls. But last year's summer season did show the effects of whatever surplus may have existed. The industry, therefore, should closely watch its runs to stills in relation to the actual demand for distillate fuel and required gasoline inventories, during the remainder of the winter, so that the burden it will carry into the summer season in the form of surplus gasoline may be kept down to a minimum.

For 1937 I had intended showing an estimate of domestic demand of 520,000,000 bbls. and an export shipment of not less than 29,000,000, or a total demand of 549,000,000 bbls. These figures would show an increase in domestic demand of 8.27 per cent and in total demand of 8.06 per cent, both on a daily average basis.

Advances in the art of refining, the advent of the home-heating oil burner and the rapidly increasing demand for distillate fuels are again greatly changing the picture. This is seemingly forcing the light fuel oil portion of the barrel of crude into the principal product class, making gasoline share this distinction with it, in perhaps a new phase in the industry's advance. Heavy fuel oil is perhaps being pushed farther and farther into the background than ever.

The distinction, attained by distillate fuel forcing gasoline to share with it the principal product class, brings added responsibility, the necessity of sharing a greater part of the cost of the raw material and contributing a greater proportion, than now, of the total income of the industry.

TABLE 1—ESTIMATE OF REQUIRED WORKING STOCKS OF MOTOR FUEL

(Figures in barrelsof 42 gallons)

	September 30		
	1935	1936	1937
Capacity of gasoline-motor fuel tankage wherever located	106,546,000	108,000,000	110,000,000
Tank bottoms	7,253,000	7,400,000	7,500,000
Refineries:			
Unavailable unblended finished	8,416,000	9,400,000	10,100,000
Unavailable unfinished	4,361,000	4,700,000	5,000,000
In lines and operating equipment	671,000	700,000	700,000
Special light tops (refrigerated storage, etc.)	600,000	600,000	600,000
Filter house naphtha not in solution	400,000	450,000	500,000
Pipe lines:			
Line-fill, operating reserves and as tenders	2,049,000	2,100,000	2,100,000
Amount in transit throughout systems	604,000	600,000	600,000
In marine transit from California and Gulf Coast:			
Allowance for tanker-fill	2,553,000	2,900,000	3,300,000
Terminals:			
Protection of points supplied by tankers	4,428,000	4,500,000	4,600,000
Frozen (icebound) and other irreducible seasonal	5,265,000	5,750,000	6,200,000
Undistributed	400,000	400,000	400,000
Total fixed unavailable	37,000,000	39,500,000	41,600,000
Shipping stocks	13,000,000	14,200,000	15,400,000
Total working stocks required	50,000,000	53,700,000	57,000,000

TABLE 2—SUGGESTED METHOD FOR CALCULATING REQUIRED INVENTORIES ON ANY GIVEN DATE, CERTAIN TIE-POSTS KNOWN

		*If the demand upon refiners for finished and unfinished gasoline should be as follows:	Index of operation	Refinery gasoline production		Change in stocks	Monthly inventory levels
				Daily	Monthly		
1936:	September 30	.....	.....	.....	.....	.....	53,700,000
	October	46,000,000	100.0	1,456,000	45,140,000	— 860,000	52,840,000
	November	41,800,000	95.0	1,383,000	41,490,000	— 310,000	52,530,000
	December	39,500,000	95.0	1,383,000	42,870,000	+ 3,370,000	55,900,000
1937:	January	36,200,000	95.0	1,383,000	42,870,000	+ 6,670,000	62,570,000
	February	32,900,000	97.5	1,420,000	39,760,000	+ 6,860,000	69,430,000
	March	40,000,000	97.5	1,420,000	44,020,000	+ 4,020,000	73,450,000
		236,400,000			256,150,000	+19,750,000	
	April	42,900,000	100.0	1,456,000	43,680,000	+ 730,000	74,230,000
	May	47,300,000	100.0	1,456,000	45,140,000	— 2,160,000	72,070,000
	June	48,700,000	105.0	1,529,000	45,860,000	— 2,340,000	69,230,000
	July	51,500,000	105.0	1,529,000	47,300,000	— 4,200,000	65,030,000
	August	51,900,000	105.0	1,529,000	47,300,000	— 4,600,000	60,430,000
	September	49,300,000	105.0	1,529,000	45,870,000	— 3,430,000	57,000,000
					275,150,000	—16,450,000	
		528,000,000	.....	.....	.....	.....	.....
	Plus 3,300,000 added to stocks..	3,300,000	.....	.....	.....	.....	.....
	Total	531,300,000			531,300,000		

Note: Calculation based upon following assumptions: (1) That 53,700,000 bbls. of finished and unfinished gasoline would have been sufficient inventory as of September 30, 1936; (2) that 57,000,000 bbls. will be sufficient as of September 30, 1937; (3) that the demand upon refiners for finished and unfinished gasoline during the year ended September 30, 1937, will be approximately 528,000,000 bbls. (4) that if the above indicated figure of inventories had been realized on September 30, 1936, and if the September 30, 1937, figure is to be realized, it would have been necessary for refiners to have contemplated a production of 531,300,000 bbls. during the 12-month period.

On an even-keel operating basis this would have called for the production of 1,456,000 bbls. of this gasoline daily during the year, but the industry does not, as a unit, operate on an even-keel basis. Assumption (5) that a 10-15 per cent fluctuation in the rate of manufacture is not excessive.

*Must not be compared with total demand for motor fuel.

Natural Gas "Privilege" Tax Is Proposed for Arkansas

LITTLE ROCK, Ark.—House Bill No. 199, introduced into the present session of the Arkansas general legislative assembly, would impose a tax of 1 cent on each 1,000 feet of the gross amount of all natural gas produced, saved or distributed within the state. The proposed levy, known as the "gas privilege tax," would be imposed on all persons, firms, corporations, or associations of persons engaged in the business of producing or distributing natural gas in the state.

The bill requires that quarterly reports be furnished the commissioner of revenue on the gross quantity or measurement of all natural gas so produced and distributed during the preceding quarter, and all payments on the basis of 1 cent for each 1,000 feet gross are to be made quarterly. This bill has been substituted for the original natural gas tax, House Bill 186, which provided for a 1 per cent tax on gross, rather than the present proposed tax of 1 cent per 1,000 feet gross.

Clashing Views on Regulation Before A. I. M. E. Session

By H. STANLEY NORMAN

NEW YORK, Feb. 22. — Clashing views on methods for regulating crude oil production marked the stabilization session of the Petroleum section of the American Institute of Mining and Metallurgical Engineers at the annual meeting here, following presentation of a paper, "Can the Rule of Capture Be Rationalized?" by Earl Oliver, of Ponca City, Okla.

The discussion took in ownership in place, as the antithesis of the rule of capture, well spacing, conservation of reservoir energy, unitization, criticism of state regulation and fear of federal control.

"The oil industry," Mr. Oliver declared, "is now in the process of passing out of the stage of destructive competition into that of government control, a thing we need to avoid equally as we do industrial monopoly. The industry can avoid both. It is the function of this symposium to consider means to that end."

Presiding over the full afternoon of prepared and spontaneous opinions was John M. Lovejoy, retiring president of the A.I.M.M.E. and president of the Seaboard Oil Co. In addition to Mr. Oliver, those taking leading parts in the discussion were Northcutt Ely, of Washington; R. E. Hardwicke, of Fort Worth, Tex.; Hines Baker, Humble Oil & Refining Co., Houston, Tex.; Max W. Ball, of Edmonton, Alberta, Canada; E. B. Swanson, of Washington, and H. B. Fell, Independent Petroleum Association of America.

Mr. Oliver said two major objectives are at all times present in the production of oil and gas; Efficient extraction of the reservoir content produced at the time and rate society needs it; and equitable distribution of that reservoir content and the market therefor among its respective owners. Attainment under the capture rule of both objectives simultaneously is not, he argued, mechanically possible.

"Methods of allocating oil and gas to its respective owners under the Ownership in Place rule fall into two distinct classes, the choice of which should be left to determination of the owners in any given pool or prospective pool as indicated by a majority vote based on a procedure designed to protect every interest involved. Those two methods are: (a) Mechanical separation and (b) engineering appraisal. Neither of these methods provides perfect allocation of the oil and gas in place, but they will gradually become more accurate as experience points the way.

"The mechanical separation method is based on uniform well spacing and uniform development and production methods. Under this condition the variations in potential capacity of the wells to produce are assumed to reflect the relative productivity of each tract. During periods of overproduction, when curtailment becomes necessary, the allowable is then prorated on the basis of potentials corrected by the scientific processes that are currently found to be applicable. Under this plan, the oil and gas produced from the wells on a tract are assumed to represent the oil that was in place on that tract. This assumption is false and inaccurate to a certain extent and is the same assumption on which the capture rule was originally based, but it is the nearest approach to recoverable acreage content that is applicable to nonunitized pools. The essential difference between this plan and the capture rule is that there would be complete uniformity of well spacing and development and production methods throughout the entire pool, and the aggrieved party would be entitled to compensation in damages, or a restraining order against the violator, whereas under the capture rule, as it had eventually developed prior to proration, the owner of each tract was privileged to determine the well spacing and development and production methods for his own tract in total disregard of that which might be in general use throughout the pool, and the only remedy the aggrieved party had under the law was to drill offset wells and adopt other equally wasteful methods as did the violator.

"The engineering appraisal method is based on estimates of recoverable acreage content developed from information on the reservoir and its contents, such as thickness and extent of producing sand, its porosity, permeability, and saturation; pressure in the reservoir; potential capacity of wells; and many other factors that must be weighed and evaluated in formulating estimates. In its application the respective owners are made tenants in common and share in all oil and gas taken at any point from the reservoir in proportion as the estimated recoverable content of each owner's land is to the estimated recoverable content of the reservoir. Under this method a period of planned exploration, including an exploratory drilling campaign, to define the pool and secure the necessary data on which to base estimates is essential before commercial exploitation is undertaken. It requires unit operation for its application.

"As between these two methods of allocating oil and gas under Ownership in Place, the engineering appraisal method, if carefully done, is most likely to approach nearer to exact justice. Neither can distribute the oil and gas from the reservoir between owners on the basis of recoverable acreage content with mathematical accuracy, but they represent the nearest approach to that standard that it has been possible to devise. They come incomparably nearer to that ideal than the unregulated capture rule.

"While the engineering appraisal method with unit operation would be the most efficient type of operation under Ownership in Place, it is essential to have as an alternative the mechanical separation method for those pools which for some reason are not susceptible to unit operation. With these two alternative methods it is entirely feasible for any state to discard the capture rule and operate wholly under Ownership in Place, except in those pools already wholly or partly drilled under the capture rule theory. Naturally, those pools should continue to exhaustion under the spacing they have already adopted."

Mr. Ely said the rule of capture has been

The Rule of Capture

Every landowner or his lessee may locate his wells wherever he pleases, regardless of the interests of others. He may distribute them over the whole farm or locate them only on one part of it. He may crowd the adjoining farms so as to enable him to draw the oil and gas from them. What, then, can the neighbor do? Nothing; only go and do likewise. He must protect his own oil and gas. He knows it is wild and will run away if it finds an opening and it is his business to keep it at home. This may not be the best rule; but neither the legislature or our highest court has given us any better.—*SUPREME COURT OF PENNSYLVANIA, 1907.*

Suggested Substitute

The antithesis of the rule of capture is: The owner of a tract of land owns the oil and gas in place and should such minerals migrate to a neighbor's land and be produced from wells thereon, title would not vest in the neighbor, but, to the contrary, the migrating oil or gas, or at least an amount equal to that which migrated, could be recovered by the true owner.—*ROBERT E. HARDWICKE.*

—Harris & Ewing

EARL OLIVER

mainly responsible for excessive drilling, a view with which Mr. Hardwicke later took issue. Mr. Ely asserted that 16,000 of the 23,000 wells drilled in East Texas were on permits granted as exceptions to the spacing rule.

Referring to the proposal to increase the size of the Supreme Court, as casting implications that ought to be perfectly plain to the oil industry, Mr. Ely said previous decisions of the court held production does not constitute commerce and hence the federal power to regulate interstate commerce does not extend to regulation of production.

"These holdings were contrary to the government's contention that the stream of commerce begins in the factory and ends with the consumer and may be regulated at any point from beginning to end." He said if this doctrine is to be accepted by a new court, the oil business is squarely in line of march. He also warned the oil industry will find itself installed as a neighbor with the coal business and some phases of the power business, if the president's department reorganization plan is approved converting the department of the interior to the department of conservation.

TWO WEAKNESSES

Two outstanding weaknesses were pointed out by Mr. Ely in the present legal mechanism for oil conservation. The first weakness, he declared, is the failure of state statutes to fully occupy the ground constitutionally open to them. Imperfect correction of the abuses under the rule of capture and tenderness toward this obsolescent rule were held up as examples. He then referred to exceptions granted to the spacing rule, opening the way for similar exceptions by all neighboring lease holders and the fact that a series of court reversals blocked the Railroad Commission of Texas from distributing proration quotas on other than substantially a per well basis. He also called attention to court emasculation of gas proration orders in the Panhandle.

Control of drilling and production, he said, might be established by enactment of a statute requiring the development of new fields under a pattern of operating districts, modeled along lines sustained in Marrs. v. City of Oxford. Findings of probable "undue drainage" between districts could probably be followed by regulation of drilling ratios as well as production ratios, and apportionment of each district's allowance among all of its leases as in the City of Oxford case.

The only issue at stake, declared Mr. Hardwicke, who presented a summary of the Independent Petroleum Association of America's subcommittee findings on unnecessary drilling, is to see that every one obtains his fair share of the producible oil in a common reservoir. Furthermore, that fair share of oil must be obtained without compelling any of the individual owners to drill unnecessary wells. He was unable to agree that administration would be more successful under unit operation than by the railroad commission or some other regulatory body, providing maladministration did not enter the picture. Undesirable features of unit operation were said by Mr. Hardwicke to involve severe restrictions on individuals which must run the test of the due process clause and left the implication courts would view with more tolerance restrictions by a government agency than those by another individual or a group.

The I.P.A.A. subcommittee assumed just as much can be done in stabilization and conservation by existing proration laws, waste prevention measures and reasonable, proper well spacing as under any other suggestion. Mr. Hardwicke said allocation of production on a per well basis must cease if proper spacing is to become a reality. He advocated measures to compel administrative bodies, by resorting to courts if necessary, to issue regulations on a basis of giving each operator his fair share of oil in a common reservoir.

Mr. Ball was inclined to believe that engineers could better determine the total number of wells required to drain a structure than how many acres could be drained around each hole uniformly spaced. He advanced that contention as a sound argument for unitized operation over the method of uniform spacing. Later, Mr. Ball injected a word of caution to oil men urging that all the scientific progress and development in producing practices be retained and furthered even though an actual crude oil shortage should develop. He said it would be human to abandon wide spacing and extensive drainage areas, in favor of the other extreme typified by East Texas, and to abolish practices for conservation of reservoir energy if the demand exceeds supply available under conservation methods.

PRODUCIBLE SURPLUS

Mr. Ball's comments were made in connection with an earlier remark from Mr. Lovejoy that "producible surplus" is now practically nonexistant. Mr. Hardwicke defended Texas' reserve position with the contention that state does have producible surplus.

Mr. Swanson regarded stabilization as a dual problem involving economic and social issues with both equally demanding solution. From a purely technical view he suggested production regulations based entirely on maintenance of reservoir energy would be most desirable. He said this system would offer a possible solution to the question of how to reward the owners of property in a gas cap area.

Mr. Baker said unitization has been carried out successfully in several Texas fields on a voluntary basis, but pointed out the legal barriers to compulsory unitization. He said that fundamentally the Texas law holds a man owns what is under his land. He regards the rule of capture as applicable to Texas as a superstructure and one that operates for the convenience of quieting title to oil after it is produced. He said the police power should function to protect correlative rights.

Mr. Baker thought uniform spacing and allocation of production on a basis of what originally existed under each man's property will follow adjustment of administrative difficulties which he said were of two main classifications, ignorance and viewpoint.

SHELL OIL COMPANY GOLF EXPERTS AT OJAI CLUB

Picture shows: A. J. Forbes, Don Anderson, P. Radcliffe, R. A. Ellis, Warren Gage, J. L. Arthur, Bill Phelps, A. L. Harrell, I. N. Kuckenbaker, A. Pollock, R. O. Guder, T. Herman, V. Wilson, W. A. Young, R. Millberry, Bud Griffin, John Roberts, W. F. Bates, A. R. Harris, Earl Armbruster, and R. S. Schmeider

OBITUARIES

S. N. TERRY, Sr., who died recently at Shamrock, Okla., after an illness of several months, operated an oil field blacksmith and machine shop in Sapulpa during the early days of the Glenn pool field, moving to Shamrock in 1916 when the Cushing field was opened. Besides his widow he left six sons, Henry H. of Shamrock, Louis H. of Drumright, Ernest W. of Seminole, Ben H. and S. N. Jr., of Sapulpa and Gerald C. of Parkersburg, W. Va.

FREDERICK BAILEY, 62, driller, died at St. Mary's, Ontario, recently.

SAMUEL POLLARD, 73, of Petrolia, died at London, Ontario, recently. Locating at Petrolia in 1878, he acted for many years as employment agent for drilling concerns throughout the world, enlisting numerous Canadian drillers for foreign fields.

W. J. REDMOND, 56, Brownwood, Tex., died in Fort Worth, Tex., February 16. He was a native of Pennsylvania.

ALBERT FALTINSON, 72, Tulsa oil producer since 1908, died February 17. He was a native of Iowa. He became interested in oil production with the development of the Bird Creek pool.

C. P. BROWN, 51, Shreveport, La., president of the Balcones Oil Co., died February 16. He moved to Shreveport six months ago from Houston, Tex., and was engaged in drilling a well in Catahoula Parish.

WILLIAM C. PROCTOR, 70, retired vice president and treasurer of Magnolia Petroleum Co., died in Dallas, Tex., February 18. He had been identified with the petroleum industry 43 years when he retired in 1932. He became connected with the J. S. Cullinan Co. in Corsicana in 1898 and remained with the company, and its successors until the end of his active business career.

H. CHARLES EHRENFELS, 65, retired Standard Oil Co. official, died at New Orleans February 19. He represented the company in the orient for many years, later managed the marine department at the Baton Rouge, La., plant and 12 years ago moved to New Orleans as manager of the asphalt department.

JAMES B. ROBINSON, 57, tank gauging engineer, died at his home in Tulsa on February 22, after a long period of ill health. He is survived by Mrs. Robinson; one daughter, Mrs. Kenneth Hartman, San Angelo, Tex.; and by the following brothers and sisters: Harry B. and Dr. Foster Robinson, Lima, O.; Frank Robinson, Findlay, O.; Clark Robinson, Tulsa; Mrs. Lillian Taylor, New York; Mrs. L. C. Longaker, Oil City, Pa., and Miss Evelyn Robinson, Tulsa.

DEPARTMENT OF GEOGRAPHY
THE UNIVERSITY OF NEBRASKA

Cabot Completes 118 Mile System to Rochester, Geneseo

By J. P. O'DONNELL

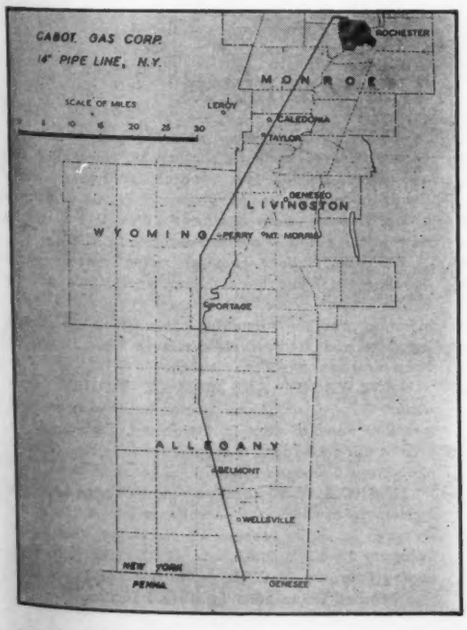
OLEAN, N. Y.—Despite opposition of seven railroads, a public utility dispensing manufactured gas and electricity, and several coal companies, Cabot Gas Corp. of Olean is now supplying Eastman Kodak Co. at Rochester, N. Y., and Pavilion Gas Co. at Geneseo, N. Y., with natural gas from the Oriskany sand fields of northern Pennsylvania and southern New York.

Cabot delivered the first gas through the 94-mile, 14-inch line to the Eastman factory just outside of Rochester on January 23. A week later, Godfrey L. Cabot, Inc., producing affiliate of Cabot Gas Corp., completed a 24-mile, 12-inch line from the State Line field to the Sabinsville field.

The corporation has a three years' contract to supply Eastman Kodak Co. with natural gas. Pavilion Gas Co., which it supplies at Geneseo in Livingston County, serves approximately 5,000 customers.

The southern terminus of the 14-inch line is in the State Line field in Genesee Township, Potter County, Pennsylvania, a half mile south of the New York-Pennsylvania state line and 6 miles west of the town of Genesee. The 12-inch line is laid from this point through the Harrison field in northeastern Potter County to the Sabinsville field in west central Tioga County.

Cabot interests have 14 wells divided among the State Line, Sabinsville, Hebron and Ellisburg fields. Four additional wells are drilling, two in New York and two in Pennsylvania, the latter in the Harrison field. The company estimates its total open flow volume at 160,000,000 feet per day currently.



Construction of the 14-inch line from the State Line field to Rochester was begun October 15, a short time after the New York Public Service Commission had granted its approval over the protests of opponents. No particular difficulty was encountered either in the engineering or actual construction work although both were carried on during the winter in a country where winters are severe.

Foreseeing delays in obtaining permission to tunnel under the tracks of the railroads which opposed the line, Cabot Gas Corp. secured permission from the various township and municipal authorities to use the highway right of way. This maneuver lengthened the line approximately 2 miles but eliminated many probable difficulties.

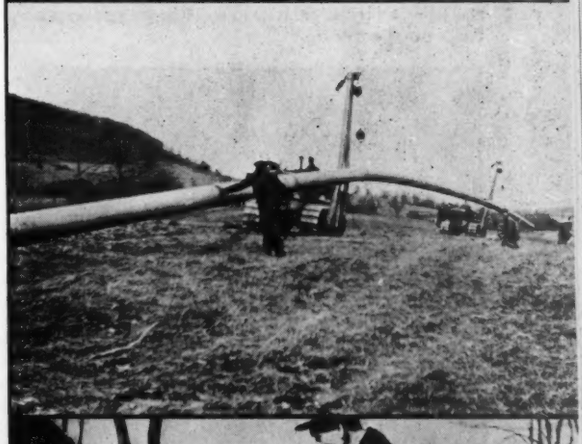
Fifteen railroad, two river and scores of highway crossings were required. The railroad and highway crossings were made by boring. Only one, that under the tracks of the Genesee & Wyoming Railroad, was done with permission of the company. Other lines crossed were New York Central, Pennsylvania, Erie, Delaware & Lackawanna, Lehigh Valley, Pittsburgh, Shawmut & Northern and Baltimore & Ohio.

The Genesee River was crossed twice in Allegany County, a short distance east of Belmont and just south of Rossburg. At both places, the stream is approximately 300 feet wide. Ten-inch manifolds parallel the 14-inch line in the river bed as an emergency measure.

Both the 14-inch and 12-inch lines are electrically welded. The minimum covering was 30 inches on dry ground and 6 feet under the bed of the stream. "Factory" or "wrinkle" bends were employed on the sharp lateral turns while the lateral bends of less degree and all vertical bends were made along the route. Five 40-foot lengths were welded together aboveground and lowered into the ditch as a single unit.

The approximate total cost of the 14-inch line was $1,500,000 and of the 12-inch line, $300,000. The construction work on the 14-inch line was done by I. C. Little Construction Co., of Dallas, Tex., and the construction work on the 12-inch line by Gannett, Eastman & Fleming of Harrisburg, Pa. The 14-inch pipe was manufactured by A. O. Smith Corp., of Milwaukee, Wis., and the 12-inch pipe was manufactured by Republic Steel Corp. of Cleveland, Ohio.

There are no compressor stations along the line at present, but the company will erect one at the junction of the two lines in Genesee Township, Potter County, Pennsylvania, during the coming summer.



Kansas Governor Asks for Gross Production Tax on Oil

TOPEKA, Kans.—Governor Walter A. Huxman in a special message to the legislature proposed a 2½ per cent gross production tax on all oil and gas produced in the state, to obtain $1,500,000. He did not include a severance tax on all minerals, he explained, because the amount of revenue that could be obtained by taxing the production of minerals other than gas and oil would be negligible. He said he believed the tax sound and that it should be adopted. The severance tax in effect would be a gross production tax, predicated on the removal of oil and natural gas from the natural depository.

"I do not share the opinion that it will lay an unnecessary burden upon the oil industry or will adversely affect it," he said. "We must remember the fact that all the oil producing territories except Kansas have a severance tax. Oklahoma, Texas, Arkansas, Colorado and California all have adopted this form of taxation . . . A 2½ per cent severance tax is as low as any of the competing states have and lower than most of them."

Governor Huxman said he did not share the argument that the adoption of a severance tax would stop leasing and deprive farmers of a source of income. No company, he asserted, will give up a lease it deems valuable because it would have to pay a tax in case they should find oil.

OKLAHOMA CITY, Okla.—Governor E. W. Marland was not inclined to take seriously the request of Governor Walter Huxman, Kansas, that income, gross production and sales taxes be enacted in that state. He said should the Kansas legislature follow the governor's recommendations, it would be no cause for the state of Oklahoma to increase its gross production tax.

However, if Texas should increase its gross production tax to as much as 4 per cent Governor Marland was of the opinion it might be necessary for Oklahoma to consider an increase in the present 5 per cent tax.

"The movement in Kansas will have no affect on the situation in Oklahoma," Governor Marland insisted, "and simply asking or suggesting in Texas won't have any affect on Oklahoma. However, what they do may have some affect on the situation here. When they get up to 4 per cent down there it will be equal, or nearly equal to our tax here. But there are manys 'ifs' about that."

Mid-Continent Production Meeting in Tulsa

If plans now being developed work out the annual meeting of the Mid-Continent section of the American Petroleum Institute Division of Production to be held in Tulsa March 25 and 26 will have a record attendance. The Panhandle of Texas is sending a large delegation by train while it is expected more than 150 members will drive from Kansas. The new chapter at Ada, Okla., promises to send about 200 members. Oklahoma City also promises to have as many or more members of that chapter in attendance.

Executives recognize the importance of these meetings and have made special provision for their men to attend. In many instances reports to men unable to attend will be requested from those present and at the several chapters in the section the papers presented at this meeting will form the basis for discussion.

VAN D. BENNETT, Chairman of Tulsa Convention Committee

Suit Filed Against Ethyl Under Antitrust Act

Charging a conspiracy to maintain gasoline prices in violation of the Sherman antitrust act, the department of justice has filed suit to enjoin Ethyl Gasoline Corp. from requiring jobbers to procure licenses for handling gasoline treated with ethyl fluid and from co-operating with refiners in restricting the distribution of Ethyl Gasoline to certain jobbers.

The suit, filed February 19 in the U. S. southern district of New York, names as defendants the Ethyl Gasoline Corp., Earl C. Webb, president, and John Coard Taylor, vice president in charge of sales.

The suit charges that through its system of licensing refiners and jobbers to treat gasoline with tetra-ethyl lead fluid on which it holds a patent monopoly, the corporation is exercising an illegal restriction on the distribution of gasoline and its retail prices.

The petition asserts that more than 85 per cent of all gasoline sold in the United States processed so as to obtain a high "octane" rating was treated with ethyl fluid and that 70 per cent of gasolines of all kinds manufactured and sold in the United States was so treated.

The government's petition asserts that all except one of 123 major refineries in the United States have entered into license agreements with the defendants and that they together "refine, sell and control more than 85 per cent of all gasoline" sold in the country.

Assertion is made in the petition that 10,000 out of the country's 12,000 jobbers are licensed by the defendants, while many have been denied the right to sell ethyl-treated fuel. The petition claims the defendants maintain investigators to see that all engaged in the industry complied with the license agreements. The government contends the defendants gave no reason for license rejections.

The jobber licenses were issued under the guise of safeguards of health, of the quality of ethyl-treated gasoline and of "business ethics," the complaint alleged. The government contended addition of ethyl fluid does not make gasoline more dangerous to handle. Failure to establish minimum octane requirements in their license policy as an assurance of quality on "regular" gasoline was objected to in the government complaint.

With reference to "business ethics," the government contends that this term was used by the "defendants to denote compliance with approved marketing policies of the major oil companies, of the market leaders among such major oil companies, and particularly the maintenance by jobbers and retail dealers who in turn purchase such gasoline outright from jobbers of the retail price for gasoline posted by the major oil companies or market leaders."

At times, the government's petition alleges, the defendants dictated to jobbers the name of refiners from whom they were to purchase their gasoline. Those who sought to change their source of supply, it was added, were held in line by threat of withdrawal of license. The complaint asserted that the defendant corporation was the sole producer of ethyl fluid in the United States.

News Notes

Sun Oil Co. has taken an oil and gas lease on 30,631 acres of Padre Island from Pat Dunn of Corpus Christi, in southwestern Texas. The island borders on the lower Gulf Coast for 110 miles.

Gulf Oil Corp. has awarded contract to Bethlehem Shipbuilding Co., Sparrows Point plant, for two additional oil tankers of 11,000 gross tonnage. Bethlehem has delivered two new tankers to Gulf Oil Corp., one on Dec. 10 and another Jan. 23.

Tankcar shipments of crude to Canadian refineries from the Cut Bank field were resumed early in February. It is expected approximately 70,000 bbls. will be shipped this month.

A drive for a 1-cent-a-gallon federal tax on fuel oil will be started soon, Representative Boland of Pennsylvania said. He plans to request the house ways and means committee for hearings.

The house ways and means committee at Washington, moving toward a favorable report on the Guffey coal bill, has tentatively approved tax features of the measure.

Doubling the 2-cent gasoline tax in Missouri for road building was urged by Senator C. C. Cope of Salem, Mo., before the senate ways and means committee.

Texas Oil Laws Extended

AUSTIN, Tex.—The Texas senate has approved extending the state oil and gas proration law two years from the expiration date next September. The house of representatives voted for extension previously and the bill now goes to Gov. James V. Allred, who was expected to sign it. The senate vote was 26 to 3.

THE MARKETS*

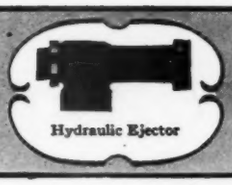
CRUDE OIL: *Another new high in production recorded in week ending February 20, when daily average was 3,298,531 bbls. Search for connections continues among buyers. All grades of Pennsylvania crude except Corning were advanced 10 cents a barrel, the new prices being effective February 24 at 7 a.m.*

REFINERY: *Refiners assert ruling tankcar prices of gasoline make its manufacture unprofitable with the higher cost of crude, but hesitate to raise them before motoring weather stimulates consumption. Demand for kerosene and heavy fuels continues vigorous, with the lighter furnace distillates strong.*

TANK-WAGON AND SERVICE STATION: *Continental Oil Co. advanced dealer tank-wagon prices of gasoline one-half cent in Oklahoma. Standard of Nebraska advanced tank-wagon gasoline .3 cent. Standard of Indiana advanced tank-wagon kerosene .3 cent.*

FINANCIAL: *Oil shares were among the better performers in a week of generally erratic market action. Average of 30 representative stocks for week ending February 20: High, 44.03; low, 42.44; close, 43.17. Week ending February 13: High, 44.28; low, 42.61; close, 43.35.*

**Detailed information in Market Section.*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Steam Ejector

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"ALL IRON" LIQUID LEVEL GAGE

FOR 500 LBS. WORKING PRESSURE AT 750° F.

"Navy Type" Liquid Level Gage

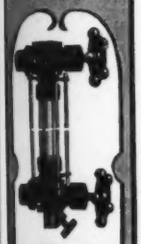
Gas Engine Lubricator

PENBERTHY PRODUCTS

HERE is a liquid level gage that is ideally suited to the difficult service requirements of the oil industry. It is made from a special high strength alloy iron and is of exceptionally rugged construction throughout. It is used wherever the liquid handled makes iron preferable to brass, and is recommended for working pressures to 500 pounds per square inch at 750° F.

The Penberthy "All Iron" Liquid Level Gage is automatic in operation. Ball check valves in both the upper and lower body close immediately and positively to prevent the loss of liquid when the glass is broken; the hand operated stop valves may then be closed with safety and a new glass inserted. The drain cock is integral with the lower gage body and is provided with thread for drain connection.

Penberthy Liquid Level Gages are carried in stock by supply houses everywhere.


"All-Iron" Automatic Liquid Level Gage

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Manufacturers of Quality Products Since 1886

DETROIT, MICHIGAN WINDSOR, ONTARIO

Automatic Cellar Drainer (Water or Steam Operated)

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Spring Compression Grease Cup

Plain Compression Grease Cup

Screw Plunger Grease Cup

It's Dubbscracked gasoline

OKTAN BENZIN—that's the word they have for it in Czechoslovakia It means anti-knock gasoline

The Apollo refinery in Bratislava sells its gasoline as OKTAN BENZIN and it is Dubbscracked gasoline Bratislava is a long way from Tulsa but Dubbscracked gasoline is always anti-knock gasoline—in every country and in every language

Dubbscracking pays

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Connally Opposition Overcome; New Patman Bills Offered

By HENRY D. RALPH

WASHINGTON, D. C., Feb. 22.—Passage of the bill to make the Connally "hot" oil law permanent seems assured following the senate subcommittee hearings. The strong endorsement given by federal and state officials is expected sufficient to carry the bill through without amendment. The subcommittee appeared unimpressed with the objections by some marketers, and refused to regard the law as a marketing control measure. This was evident when Chairman Tom Connally of Texas was questioning George W. Holland, director of the Petroleum Conservation Division of the Department of the Interior.

"I don't believe the bill is a marketing measure or has anything to do with marketing," said Mr. Holland. Senator Connally agreed so heartily it was apparent the answer was in accord with his own views.

In questioning marketers Senator Connally asked repeatedly whether they were in favor of the federal government's assisting state governments in enforcing state laws. He stressed that this was all the Connally act does.

Few marketers were willing to admit they had purchased, or would purchase "hot" oil, and as the only purpose of the act was to prevent a market for "hot" oil, the opposition was greatly minimized.

Paul Hadlick, National Association of Oil Marketers; Clarence Schock, Independent Jobbers Association of Pennsylvania; and H. M. Wilson, Iowa Independent Jobbers Bureau, appeared against the bill. On cross examination by Senator Connally, Mr. Hadlick stated he did not oppose state control of crude production for preventing waste, but did oppose assistance by the government to the states in curtailing production if current demands were not met.

Harvey Fremming, president, International Association of Oil Field, Gas Well & Refinery Workers of America, attempted to have a minimum wage, maximum hour amendment inserted in the bill.

"I think that you are in the wrong forum," said Senator Connally. "This bill doesn't do anything more than assist the states in enforcing their laws. We're not going to include an amendment which might raise a constitutional question."

Wilmer Schuh, president, National Association of Petroleum Retailers, comprised of 300 local service stations from coast to coast with a total membership of 52,000 service station men, said: "I favor, and so does my organization, the reenactment, without amendment, of the Connally Act."

Testifying as to the success with which violators of the Connally Act have been prosecuted, Richard H. Hill, special assistant to the attorney general, said that out of 248 cases the government has won 231, lost 2, and 15 are pending.

Telegrams from J. Ed Erwin, North Texas Oil and Gas Association, and W. B. Hamilton, West Texas Chamber of Commerce, endorsed the bill.

Senator Connally said Governor Allred of Texas favored the reenactment of the bill.

Russell Brown, counsel for the Independent Petroleum Association, submitted endorsements of the bill by Mid-Continent Royalty Owners Association; California Oil and Gas Association; Illinois-Indiana Petroleum Association; Kansas Stripper Oil Well Association; Kentucky Oil and Gas Association; Oil and Gas Association of Michigan; New Mexico Oil and Gas Association; New York State Oil Producers Association; Oklahoma Stripper Well Association; Southern Oklahoma Oil and Gas Association; Central Pennsylvania Oil Producers Association; Bradford District Pennsylvania Oil Producers Association; West Central Texas Oil and Gas Association; North Texas Oil and Gas Association; and Rocky Mountain Oil and Gas Association.

STEPPING OUT—*Senator Joseph Guffey of Pennsylvania is pushing his new coal bill which may react on oil.—(Harris & Ewing)*

Fayette Dow, vice president and general counsel of the Pennsylvania Grade Crude Oil Association, filed a telegram from J. E. Moorhead, executive secretary, urging reenactment.

J. D. Collett, president, Mid-Continent Oil and Gas Association, and George A. Hill, president, Houston Oil Co., testified in its favor.

R. E. Decker, Dixie Marketers, appeared in opposition.

H. B. Fell, for the National Stripper Well Association, said the act had enabled thousands of independent stripper well operators to stay in business.

Statements opposing the bill were filed by South Carolina Oil Jobbers Association, Georgia Independent Oil Marketers Association, North Carolina Jobbers Association, and by L. O. Baucum, jobbers division of the Kentucky Petroleum Marketers Association.

Bryan Payne, Iowa-Payne Oil Co., favored reenactment, but asked an additional federal tender board be set up in the Corpus Christi territory, to supervise shipments. "Down in Corpus Christi they're shipping out 10,000 bbls. a day of 'hot' oil."

Two bills to place further restrictions on selling practices, both of which might have drastic effects on the oil industry, have been introduced by Representative Wright Patman of Texas, co-author of the Robinson-Patman price discrimination act.

H.R. 4722 would prevent manufacturers from selling directly at retail under certain conditions, which might have the effect of requiring all oil refiners to divest themselves of filling stations and cease selling fuel oil direct to consumers. The bill would make it unfair competition for a manufacturer to sell at retail to consumers where this practice may substantially lessen competition between the manufacturer and his retail customers, tend to create a monopoly, or injure or prevent competition among retailers.

H.R. 4726 would amend the Clayton anti-trust act to make it unlawful for any person to make a sale or contract a sale for furnishing any commodity or service on the condition or understanding that he will in turn purchase the goods or services of the purchaser where the effect of such a reciprocal deal may be substantially to lessen competition or create a monopoly.

Representative Patman said "the bill will prohibit an automobile tire manufacturer from requiring its customers to sell the products of a certain oil company in order to continue to be the agent for their own product, and it will prevent an oil company from requiring its agent to sell a certain automobile tire if they handle tires, in order to continue to sell their oil products."

Oil News from Foreign Lands

Venezuela Output

Compared to January, 1936, Venezuelan February production was less by 4,802,487 bbls.

January production by fields and companies, contrasted to similar figures for the same month in 1936, are shown in the following table:

VENEZUELAN CRUDE PRODUCTION

	January, 1937	January, 1936	Dly. avg. Jan., 1937
By fields—			
Lagunillas	3,928,413	7,052,503	126,723
La Rosa-Ambrosia	1,079,936	1,996,879	34,836
Mene Grande	562,800	1,417,878	18,155
El Mene	57,381	64,139	1,851
Tarra	99,800	459,017	3,219
La Paz	.....	12,741	.....
Concepcion	12,800	109,616	413
Cumarebo	207,968	166,430	6,709
Quiriquire	2,126,523	1,653,330	68,598
Federnales	54,425	.....	1,756
Total	8,130,046	12,932,533	262,260
By companies—			
Lago Pet. Co.	3,387,089	4,190,355	109,261
Venezuela Oil Con.	566,400	3,162,217	18,271
Standard of Venezuela*	2,659,584	2,274,927	85,793
Caribbean	562,800	1,417,878	18,155
Colon	99,800	459,017	3,220
Mene Grande†	745,000	1,364,000	24,032
British Controlled	57,381	64,139	1,851
No. Ven. Pet. Co.	51,992	.....	1,677
Total	8,130,046	12,932,533	262,269

*Includes Creole's interest in Lagunillas and La Rosa.
†Formerly Venezuela Gulf Oil Co.

Colombia's Record Output

Colombia's crude oil production reached a recent record high in January of 1,668,490 bbls., exceeding by several thousand bbls. the highest output reported in 1936. Colombia was called upon to supply part of the crude oil shortage occasioned by the labor strike in the Lake Maracaibo district of Venezuela which was in progress during part of January.

Peru's crude production for January, however, declined approximately 40,000 bbls. from the preceding month's output and dropped to 1,263,598 bbls., exclusive of approximately 190,000 bbls. produced during the month by Lobitos Oilfields, Ltd.

Colombia's output in January compares with 1,641,636 bbls. in December, 1936, and with 1,611,618 bbls. in January of last year.

Production statistics of the two South American countries, follow:

COLOMBIA CRUDE OIL PRODUCTION

	1937	1936	1935
January	1,668,490	1,611,618	1,653,647
December	.....	1,641,636	.....

PERU CRUDE OIL PRODUCTION*

January	1,263,598	1,193,714	1,248,465
December	.....	1,303,641	.....

*Figures do not include Lobitos production averaging 6,000 bbls. daily for 1936 and 6,100 bbls. for January, 1937.

In the Persian Gulf Field

Five of California Arabian Standard Oil Co.'s 10 operations along the western shoreline of the Persian Gulf are either shut in, testing or waiting on bottom-hole cement plugs to set.

The remaining five operations, one of which is a wildcat test 40 miles north of the proven productive Dammam structure, are at various stages of development.

On the productive Dammam structure, two wells, the Nos. 1 and 3, are reported shut in while a third, the No. 2, is reinstated on the active list and is now being prepared for a cement job to shut off water due to failure of the previous plug. California Arabian Standard No. 4 Dammam was drilled to 2,318 feet and is now standing with bottom of the hole cemented. No. 5 Dammam was drilled to total depth of 2,475 feet, plugged back to 2,003 feet and is now testing. No. 6 Dammam is drilling at 1,475 feet and No. 7 is bottomed at 1,708 feet where operators are fishing for drill pipe. No. 8 Dammam is standing cemented, presumably at an intermediate casing seat point and No. 9 is standing awaiting rotary drilling equipment.

Forty miles north of the productive Dammam structure, California Arabian Standard No. 1 El'Alat, is drilling at 3,090 feet.

Socony-Vacuum Accepts

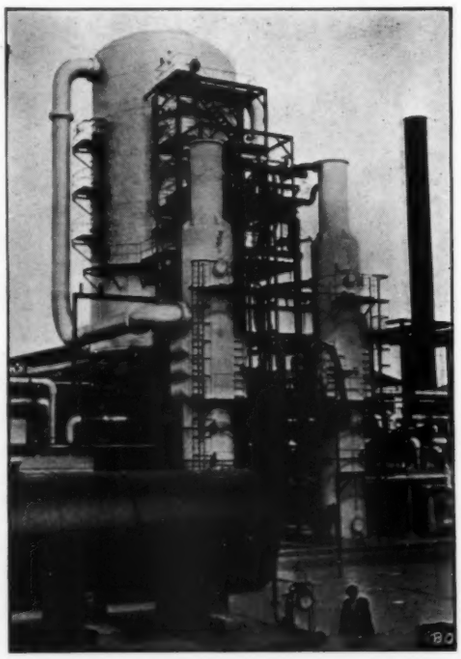
An option agreement covering stock owned in South American Gulf Oil Co., which in turn owns 79 per cent of the Colombia Petroleum Co., has been accepted by Socony-Vacuum Oil Co., Inc., and the Texas Corp. Each of the two companies agrees that for a period of 50 years it will have the optional privilege of buying the other's interest in South American Gulf before selling to a third party.

The agreement also provides that if one of the companies does not take the other's interest on terms substantially the same as offered by a third party, the third party would have to agree to the restrictions of the option contract.

Under terms of the agreement neither of the present companies owning controlling interest is likely to become associated with undesirable partners in the Colombia Petroleum Co., which owns the Barco concession in eastern Colombia.

The agreement also provides for an equal voice in the meetings of both South American Gulf and Colombia Petroleum Co.

Full stock ownership of South American Gulf Oil Co. was jointly purchased by Socony-Vacuum and Texas Corp. from Gulf Oil Corp. for $12,500,000 in 1936.



One of the vacuum towers and unit condensers, Anglo-Iranian Oil Co., Abaden, Iran, refinery. (Anglo-Iranian Oil Co. photo)

U.S.S.R. Decentralization

Further decentralization of U.S.S.R. oil industry was carried into effect following an order by the People's Commissar for Heavy Industry. Flexibility and greater independent action by various units is sought. The latest move which established three new operating units and one drilling contracting trust followed return and complete report of the U.S.S.R. commission from an inspection of American methods. Three new trusts, Alyatneft, Kirovneft and Artemneft, were formed Jan. 1 to intensify drilling and producing operations in the Baku district. The fourth new trust, Asbourneft, is to carry out drilling operations on a contract basis. There are now 10 divisions in the Baku district responsible for producing and drilling operations in addition to several engaged in geological and exploratory work. Closer unity between operating and technical management in the Baku region was obtained by decentralization of management in July, 1936, but the machinery remained too cumbersome.

Lower Austria's Production

Sustained production of 1,750 to 2,000 bbls. of oil per day from lower Austria's new oil well has elevated appraisals of the area as a proven source of petroleum supply. The well is by far the largest producer in the country and if the output is sustained over a longer period or is supplemented by additional completions, Austria's domestic production will assume more important proportions.

Austria is estimated to have produced approximately 52,500 bbls. of crude oil during 1936, compared to 46,200 bbls. in 1935 and to 29,400 bbls. in 1934. Preliminary figures for 1936 are subject to adjustment and the country may show an even greater increase.

The new producer near Zistersdorf in lower Austria is completed at approximately 2,700 feet. The crude produced is low in gravity, but is reported to have particular value for production of lubricating oil. Production is coming from the Sarmatic horizon which is generally characterized by flashy initial performance with rather abrupt decline to the pumping stage.

Mexico Production Up

Mexico's crude oil production jumped to the recent high total of 6,120,635 bbls. in January, far eclipsing output during the preceding month and for the same period in 1936.

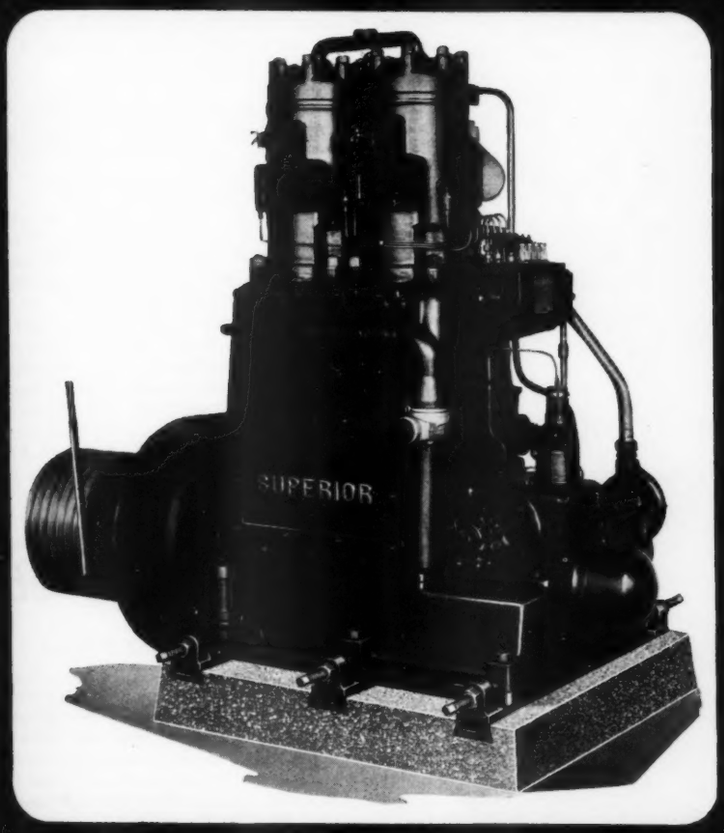
The Ministry of National Economy in issuing estimated production figures of 6,120,635 bbls. for January, 1937, reported that December, 1936, output was 4,259,733 bbls. (corrected total) and that January, 1936, yield was 3,377,591 bbls.

January's production was reported the highest for any month in many years. Improved foreign and domestic markets, intensification of activities in old and new production zones and an overall increase in number of producing wells were factors contributing to the record.

Chile Rejects Monopoly Plan

Proposals for a state oil monopoly in Chile have been rejected by the Chilean Cabinet as a plan that would participate an increase in petroleum prices. The proposal was fostered by the Chilean Minister of Economy with the support of Compania de Petrolios de Chile (Copec), a national oil company in which the government is financially interested. The Chilean Cabinet found that to establish a complete monopoly would involve such heavy expenditures costs to consumers would inevitably rise. While Copec is competing successfully with foreign petroleum companies in Chile, the cabinet found acquisition of others' distribution facilities and establishment of an organization sufficiently large to handle the nation's petroleum business would force an increase in prices to consumers.

Superior VERTICAL PUMPING ENGINES



SUPERIOR "GA" VERTICAL 2-CYCLE PUMPING ENGINE

Type "FA"-2, 30 H. P.; "GA"-2, 50 H. P.; "GA"-3, 75 H. P.; "GA"-4, 100 H. P. Also Type "M" up to 235 H. P.

Medium speed—permits single reduction gear.

•

Speed range 400 to 800—eliminates changing sheave for potentials.

•

2, 3 or 4 cylinders—can change engine to increase power with only slight installation cost. Superior is only line with this feature.

•

Convertible to Diesel—operates on crude—low injection pressure—Superior nozzle avoids spray troubles.

•

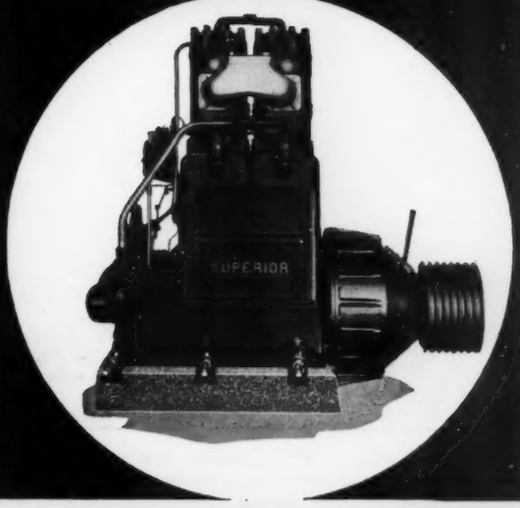
Power takeoff at flywheel end—lessens torsional strains. Flywheel completely enclosed.

•

Engine is complete—built-in water pump; air starting valve; etc.

•

Highest quality throughout—die forged, ground, counterbalanced, large size crankshaft; drop forged rods; ground crossheads and pistons; honed crosshead guides and cylinders, etc.



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Natural Gas News

San Diego Gas Rate

LOS ANGELES, Calif.—Gas and electric rate reductions which will save consumers $422,897 annually, were announced for San Diego Consolidated Gas & Electric Co. by the State Railroad Commission.

The new rates represent the fourth reduction in charges in two years, with a total saving to consumers of $1,025,611. The new rates will become effective next March 15.

Illinois Tax Proposal

AUSTIN, Tex.—The Texas house of representatives adopted a resolution censuring a proposal by the Illinois legislature to tax natural gas piped from Texas.

Representative G. H. Little of Amarillo said the tax would be a boycott on Texas gas and "if anybody was to tax such gas, Texas should do it."

El Paso Ruling

The Texas attorney general's department has ruled the importation of natural gas by El Paso Natural Gas Co. from Jal, New Mexico, to El Paso, Tex., and sale to an unaffiliated distribution company, Texas Cities Gas Co., is interstate commerce and not subject to the Texas gross receipts tax levy. The opinion further held gas imported by El Paso Pipe Line Co. from the same field and sold at rural or urban domestic, commercial or industrial taps within Texas direct to the consumers was intrastate commerce and subject to the tax.

A.G.A.E.M. Exhibits

Manufacturers who have already reserved exhibit space at the exhibition of gas equipment and appliances, Kansas City, Mo., to be held in conjunction with the convention of the American Gas Association, natural gas department:

American Gas Products Corp., American Meter Co., American Thermometer Co., Bryant Heater Co., Chaplin Fulton Manufacturing Co., Connelly Iron Sponge & Governor Co., Crane Co., Cribben & Sexton Co., Detroit-Michigan Stove Co., S. R. Dresser Manufacturing Co., Estate Stove Co., Gas Magazine, General Controls Co., General Gas Light Co., Homestead Heater Corp., Hotstream Heater Co., Merco Nordstrom Valve Co., Metric Metal Works, Minneapolis-Honeywell Regulator Co., Moore Corp.

Mueller Co., L. J. Mueller Furnace Co., Ohio Foundry & Manufacturing Co., Pacific Meter Works, Payne Furnace & Supply Co., Pittsburgh Equitable Meter Co., Pittsburgh Water Heater Corp., Reliance Regulator Corp., Robbins Publishing Co., Robertshaw Thermostat Co., Geo. D. Roper Corp., Ruud Manufacturing Co., Safety Gas Main Stopper Co., Security Stove & Manufacturing Co., Sprague Meter Co., Surface Combustion Corp., Tappan Stove Co., Ward Heater Co., Webster Engineering Co., Westcott & Greis, Inc.

O.N.G. Income

Oklahoma Natural Gas Co. reported net income for the fiscal year ended November 30, 1936, of $929,867 equal to $1.05 a common share compared with $600,375 in the preceding year. Gross income totaled $2,574,566 against $2,338,064 in 1935 or an increase of $236,501. Operating expenses and taxes increased $307,991 to $3,707,444.

Can Tax Imported Gas

AUSTIN, Tex.—The attorney general has ruled taxes on sale of natural gas imported into Texas and used in this state do not constitute a forbidden burden on interstate commerce.

The opinion of Alfred M. Scott, assistant for the railroad commission, held the tax of one-fourth of 1 per cent on gross receipts obtained from burner tip sales on the distributing system was applicable to the importing companies which own Texas distribution systems.

It applied particularly to the Arkansas-Louisiana Gas Co., which supplies Jefferson, Linden, Avinger, Daingerfield, Naples, Omaha, Pittsburg, Gilmer, Winnsboro, Mount Vernon, Mount Pleasant, Texarkana, Queen City and Atlanta.

"The sole and ultimate effect of the act," Mr. Scott said, "is that when the gas reaches its destination and is there commingled with the common mass of property in local distribution operations, the gross receipts of such local distribution are taxed for the privilege of owning, operating, managing and controlling a pipe line lying wholly or partly within this state, whether the same be used for interstate or intrastate commerce."

GENERAL COMMITTEE GAS MEASUREMENT SHORT COURSE

Standing: Max Watson, L. G. Rheinberger, Earl Knightlinger, Kate A. Niblack, G. B. Lane, J. H. Satterwhite, G. W. McCullough, A. E. Higgins. Front: W. H. Carson, W. R. McLaughlin, E. E. Stovall, Gilbert Estill and F. C. Walters

The general committee of the Southwestern Gas Measurement Short Course, meeting at the University of Oklahoma, Norman, set April 20, 21 and 22 for the course this year. E. E. Stovall, general chairman, presided. Gilbert Estill, Oklahoma Natural Gas Co., Tulsa, was appointed chairman of the program committee; W. H. Carson, University of Oklahoma, chairman of the banquet and local arrangements committee; Max Watson, Canadian River Gas Co., Amarillo, Tex., chairman of the exhibits committee; G. W. McCullough, Phillips Petroleum Co., Bartlesville, Okla., chairman of the publications committee; Miss Kate Niblack, Oklahoma Utilities Association, Oklahoma City, chairman of the registration and publicity committee; and L. G. Rheinberger, chairman of the practical methods committee.

Miss Niblack, who is acting secretary of the Oklahoma Utilities Association, was elected a permanent member of the committee representing the Oklahoma Utilities Association.

Other general committee members are: E. M. Myers, Corporation Commission, Oklahoma City; A. E. Higgins, secretary of natural gas department, American Gas Association, Dallas, Tex.; William F. Lowe, secretary Natural Gasoline Association of America, Tulsa; J. H. Satterwhite, American Meter Co., Tulsa; W. R. McLaughlin, Pittsburgh Equitable Meter Co., Dallas, Tex.; G. B. Lane, Foxboro Co., Dallas, Tex.; George P. Bunn, Phillips Petroleum Co., Bartlesville, Okla.; Earl Kightlinger, Arkansas-Louisiana Gas Co., Shreveport, La.; R. D. Hanley, Magnolia Petroleum Co., Dallas, Tex.; Fay C. Walters, Panhandle Eastern Pipe Line Co., Kansas City, Mo.; C. A. Breitung, vice president, Southwest Gas Utilities Corp., Ada, Okla.; Ray Rountree, United Gas Public Service Co., Houston, Tex.

The next meeting of the committee will be held in Tulsa during the Oklahoma Utilities Association annual meeting, March 22.

Refinery Projects

Leonard Unit Progressing

MUSKEGON, Mich.—Leonard Refiners, Inc., is expected to complete installation of its new Dubbs cracking unit in Alma, Mich., ready for operation about April 1. The plant will run crude from the Crystal, Porter and Buckeye fields in Michigan and has closed contracts for additional Mid-Continent crude to be carried by pipe line to Detroit and thence to Alma by tank truck.

Pentagon refinery at Plymouth, Mich., was enabled to go on stream last week by the beginning of Mid-Continent crude oil deliveries, it was announced by John N. Muirhead, managing director. The company plans to increase its throughput to 2,000 bbls. a day before April 1. Originally designed to run Michigan crudes, the plant has been revamped under the direction of Don J. Baize, refinery engineer, who has been named superintendent.

Plan New Refinery

FORT WORTH, Tex.—T. E. Patton of Mineral Wells, Tex., is planning erection of a 500-bbl. skimming plant just south of Post City in Garza County, Texas. The plant will operate on crude now being produced in the small field about 2½ miles southwest of that city, the pool not having an outlet for its crude to date.

Old Dutch Refining Status

MUSKEGON, Mich.—Resignation of John Borden, president of Old Dutch Refining Co., announced to have taken effect February 15, has not been accepted. Though Allison L. Bayles, of the New York brokerage firm of Bayles, Softye & Co., held an option to purchase Mr. Borden's interest, no deal had been completed late last week. As a

consequence Mr. Borden still holds controlling interest though a conference with regard to new financing for operating capital and purchase of crude was reported to have been held in Chicago last week.

A statement issued by M. S. Riglander, Bartlesville, Okla., credit manager of Phillips Petroleum Co., denied his company had any interest in gaining control of the Michigan plant, as had been reported at the time Mr. Borden's resignation was announced. Settlement of the financial future of the company is anticipated soon.

Atlantic Building Crew Increased

HOUSTON, Tex.—Construction crews have been increased to 1,200 men by the W. M. Kellogg Co. to insure completion of Atlantic Refining Co.'s new refinery at Atreco, near Port Arthur, Tex., by May 1. The plant when completed will be capable of processing 27,500 bbls. of crude daily and will contain a 1,200-bbl. polymerization unit.

Pipe Line Work

Cities Service Gas Line

Cities Service Gas Co. is to start work on a 55-mile 12-inch pipe line from the Carter Oil Co. gasoline station, section 30-2-7e, in the Fitts pool in Pontotoc County, to a connection with the 16-inch pipe line at section 32-10-7e, in Seminole County.

Plans call for the taking of from 15,000,000 to 20,000,000 feet of the residual gas from the Carter gasoline plant and mixing the dry gas with gas from Empire Oil & Refining Co.'s gasoline plants in Seminole and Pottawatomie counties.

Sandy Point Line

HOUSTON, Tex. — Sinclair Prairie Pipe Line Co. has made preparations to construct an 8-mile 4-inch oil line from the Sandy Point field in Brazoria County which will tie into the company's main 8-inch trunk line from the Damon Mound field to Sinclair Refining Co. plant on the Houston Ship Channel at Pasadena.

Line to Lisbon Field

SHREVEPORT, La.—It is reported Gulf Pipe Line Co. will lay a line into the newly discovered Lisbon field of Claiborne Parish, Louisiana, to connect to its Arkansas-Dubberly line and provide Lisbon a ready outlet for its oil.

Now Bell General

KILGORE, Tex. — Gilliland Pipe Line Co., J. W. Gilliland, president, announced the name of the company had been changed to Bell General Pipe Line Co. The announcement stated there was no change in the ownership, management or address of the company, and added that the corporation is owned half by Bell Oil & Gas Co. and half by General American Oil Corp. The latter firm, headed by R. G. Trippett and A. H. Meadows, has headquarters in Shreveport.

Reclaiming Old Pipe

Oklahoma Pipe Line Co. has contracted to have 3.67 miles of 10-inch pipe line taken up and reconditioned between Hugo and Golden, Okla. This is part of the general plan to reclaim the old pipe in the line between Healdton and DeQueen, recently abandoned. The pipe will be sold or stored in the Hugo yards. There is still considerable pipe to be removed from the ditch east of Hugo, Okla.

Michigan Extensions

MUSKEGON, Mich. — Rapid rise of the new Buckeye Township, Gladwin County, oil field in north central Michigan during the past few weeks has resulted in the decision of two major pipe line operators to extend their services to the field. Simrall Pipe Line Corp. plans to lay 30 miles of 6-inch from its Buckeye pumping station to Mount Pleasant to deliver crude to Roosevelt Oil Co., and to the Michigan-Toledo Pipe Line for Toledo, Ohio, refineries.

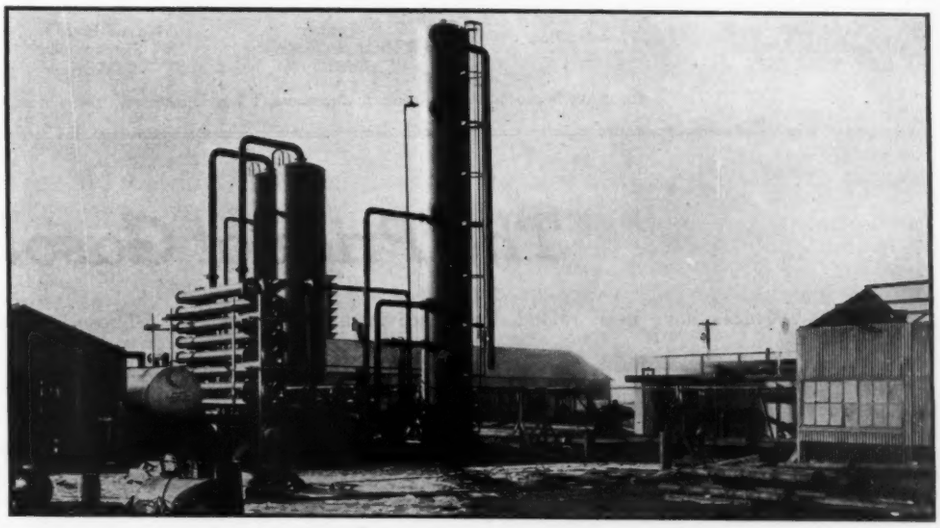
Pure Transportation Co. is laying 11 miles of 6-inch line from the Buckeye field to Beaverton, where crude will be shipped to refineries by rail or pipe line.

Six producers already have been completed in the new field with about 40 tests under way or contemplated soon.

Ann Arbor Gas Line

Negotiations to provide Ann Arbor, Mich., with natural gas service are being concluded, it was announced by Charles R. Henderson, manager of the Washtenaw Gas Co. The supply, it was said, will come from the Panhandle Eastern Pipe Line Co., now servicing Detroit. The pipe line to Detroit passes about 20 miles south of Ann Arbor, and, a branch line would be extended to Ann Arbor.

Natural Gasoline



EMPIRE'S NEW GASOLINE PLANT NEAR HAVEN, KANS.

Empire Oil & Refining Co. new gasoline plant in the Stone sector of the Burrton field, near Haven, Kans. The plant has a daily capacity of 30,000,000 feet of gas from which some 18,000 gallons of natural gasoline will be extracted daily. This is the second plant for Empire in the Burrton field, the company completing another plant in the Burrton field about 18 months ago. All gasoline made in the new plant will be stabilized in the Burrton plant.

Witco Carbon Plant

FORT WORTH, Tex.—The Witco Carbon Black Co. is building one of the largest plants in the country for the manufacture of carbon black at Sunray, Moore County, in the Panhandle, and the first unit is expected to begin burning soon.

Adding Butane Equipment

SHREVEPORT, La. — Lisbon Gasoline Co. is now completing enlargement of its 6,000,000-foot capacity compression gasoline plant at Turnertown, East Texas field, which will equip them for the manufacture of butane. Increased boiler capacity, new fractionating tower and other equipment incident to this change have been installed.

Arkansas Fuel Oil Co. is also making enlargements to its 8,500,000-foot capacity absorption gasoline plant at Greggton in the East Texas field to permit them to manufacture butane.

New Moore County Project

FORT WORTH, Tex.—Shell Petroleum Corp. and Sinclair Prairie Oil Co. have pooled acreage and entered into an agreement to build a 65,000,000-foot gasoline extraction plant in section 176, T.& N.O. Survey, Moore County, Texas. These two companies have also made arrangement with Columbian Carbon Co. to erect a carbon black plant in the northeastern part of the sour gas area of Moore County to utilize residue gas from the plant. Construction is planned to start within a month, the two plants involving an expenditure of approximately $1,500,000.

This is the third project of a similar nature to be announced for Moore County in the past few months. Shamrock Oil & Gas Corp. and Continental Oil Co. joined to build the Witco carbon plant to utilize residue from the recently enlarged Shamrock McKee plant. Phillips Petroleum Co. now has under construction a carbon black plant to take residue from a gasoline plant being built by Magnolia Petroleum Co. and the Phillips Sunray plant.

Plan East Texas Plant

FORT WORTH, Tex. — Fred M. Allison and associates of Corsicana, Tex., are reported as contemplating the erection of a natural gasoline plant to be erected on the Litchfield farm in Clendennan Survey, Henderson County, Tex. These operators have production in the field, some of the wells supplying gas for the Athens Gas Co. line which transports gas from the field to commercial plants in Athens. If the plant is built it will strip gas from the wells, the residue being taken by the gas company.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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The Price of Gasoline

Voices have been raised, both individually and collectively, in certain state legislatures against the recent advance in the price of gasoline. Yet, if justice is to be meted to the oil industry, these protests are unwarranted, because the history of the past seven years and the best information available on the production, manufacture and marketing of oil points out the undeniable fact that gasoline prices have not yet reached a fair level.

The chaos which was evident in the marketing end of the oil business through most of the depression was due primarily to this maladjustment of values, and if any real stabilization program is to reach full fruition gasoline prices are bound to go a little higher.

The testimony given at Washington by ranking government officials, (ranking in their acquaintance with the conditions in the oil industry) indicates that the consuming public has been the beneficiary rather than a sufferer from gasoline prices.

This evidence by representatives of the federal government, in position to know what they are talking about through official study of the facts and figures about petroleum, is in sharp contrast with the attitude of state legislators raising outcry against the industry.

These legislators ignore the fact that as members of the taxing bodies they have beclouded the plight of the marketing end of the oil business by pyramiding taxes with each painful recession in the product price.

Hence cutthroat competition, distress markets and the tax collector have combined to present an artificial picture to the consumer which picture must be clarified if stabilization is to become permanent.

The tax levying legislator, if honest with himself, must recognize his own responsibility for the price the consumer pays for gasoline. It is not what the oil industry gets but what the state has piled on top of that which runs up the consumer's bill.

Improvement in the price of crude was necessitated by the existing supply and demand if the industry was to continue functioning. The refiner equally must get a better return to meet rising cost of raw materials, labor and taxation.

Rather than insinuating statements and threatening investigations officials should recognize the present trend to higher prices is one of just equalization for the establishment of the industry on a stable foundation where it can operate most efficiently for the public interest as well as its own.

USE *LARKIN* SPIDERS

They're Engineered to hold *Longer* Strings Safely

The new, redesigned Larkin Spider has given the industry a stronger, safer method of suspending long strings of casing in the hole, than it ever had before!

In a test conducted by the Robert W. Hunt Company, Engineers, a 9-5/8" OD Split Spider withstood a total load of 353 tons without distortion. This is equivalent to 3.3 miles of 9-5/8" OD 40 lb. casing.

Larkin Spiders are so practical, so scientifically "engineered," so easy to handle, that in a great many cases they are supplanting the use of clamps, even on short strings.

Larkin Spiders are available in two types—Solid and Split. They're made of the best grade of cast steel available. The slips are made of high carbon forged steel, heat treated to a hardness of 350 Brinnell.

The assembly of the Larkin Split Spider is very simple. No heavy lifting at all. You merely slide the two halves together and insert the forged steel dovetailed key.

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Marshes Impede Laying of Coast Gas Line

By F. L. SINGLETON

Lowering pipe into ditch through quicksand section west of Taylors Bayou on Humble Oil & Refining Co.'s new gas line

With the worst stretches already completed, laying of the remainder of Humble Oil & Refining Co.'s new 122-mile, 10-inch electrically welded gas line from the Tomball field, northern Harris County to industrial centers at Houston, Baytown and Port Arthur, Tex., is expected to proceed without further difficulties. It is anticipated that the Houston-Baytown-Port Arthur section of the line will be completed and in operation on schedule or soon after the first of March. Work on the Tomball-Houston section has been delayed, but pending the completion of this, gas will be supplied to the Houston-Baytown-Port Arthur section from the Anahuac field, from which an 8-mile, 8-inch feeder line is now being laid.

Along the Baytown-Port Arthur right of way, some of the most difficult conditions ever found on the Gulf Coast have been encountered. These stretches consisted of wooded sections and quicksand marshes which made operating conditions extremely bad. The worst section was an 8,000-foot strip through the Hilderbrandt swamps just out of Port Acres in southern Jefferson County. Through the swamps matting had to be used. These mats were 6 by 10-foot sections, and were built out of 3-inch planks. As each joint of pipe was laid, the mats were picked up by the boom and carried forward for the next joint of pipe.

The quicksand was encountered in the wooded section, making it impossible to keep an open ditch. The sand and silt soon filled the ditch after it had been dug. In some places where it was impossible to get the silt and quicksand from the ditch, "stompers" were used to drive the pipe to the bottom of the ditch. The stompers were made out of 3-inch timbers bolted together with two U-bolts and grooved at the bottom to fit the face of the pipe. Special care was made not to damage the coating and the grooves were padded with sacks filled with 6 inches of sawdust. By driving the tractor on top of the stomper and rocking back and forth by reversing the tractor clutch, the pipe was driven to the bottom of the ditch. This method was not used, however, unless there was no other means to get the pipe down. Original plans called for the completion of the entire system by April 1, with gas from the Tomball field, 25 miles northwest of Houston, to supply industries at Houston, Baytown, Port Arthur and the Port Neches area. Continued rains, however, during January, which slowed up work made necessary the concentration upon the Houston-Baytown-Port Arthur section so that at least that much of the system could be completed in order to meet industrial contracts.

The Houston-Port Arthur section consists of approximately 97 miles of line. Of this, approximately 30 miles, the section between Houston works of the Texas Co. and Baytown consists of an oil line recently purchased by Humble Oil & Refining Co. from the Pan American Pipe Line Co. From Baytown to Port Neches and Port Arthur, new pipe is being laid. The latter is approximately 70 per cent complete, the completed portion taking the work entirely out of the heavily wooded quicksand and marsh and swamp sections of the right of way. The remainder is practically all through rice and farming land and although wet weather may slow up work to some extent, very little difficulty is anticipated.

In all, including 15 miles of the Tomball-Houston section, a total of 52 miles have been completed. The Baytown-Port Arthur section of the line was laid under the supervision of George A. Peterkin for the Apex Construction Co.

With the exception of river crossing, all pipe is 40 to 48-pound seamless pipe tested to 1,000 pounds pressure. The pipe was shipped by rail direct to four centrally located yards located at Barbers Hill, Hampshire, Port Acres and Houston, where it is coated and wrapped at each yard under contract by Mayes Brothers, Inc., of Houston. Four machines were set up for the job and as the pipe was unloaded it was coated and wrapped and racked. The type of machine used for coating and wrapping is one in which one or more hot coatings can be applied and wrapped in a continuous operation. The pipe is given a primer coating and then given two coats of tar enamel and heated to 450°, to a thickness of one-thirty-second of an inch. Before the pipe leaves the yard holiday detectors are run over the finished pipe to insure that all sections are properly coated. However, no imperfections have been found to date.

From the rack pipe is loaded on stringing trucks, equipped with rubber bolsters to prevent damage to the coating. As the trucks leave the main highway they are met by a fleet of diesel tractors and are pulled two at a time to the right of way. However, in some cases it was necessary to use two tractors to one truck. This prevented loss of time in getting the pipe to the stringing gang in case the truck became stuck. The trucks work on schedule and very little time has been lost by the stringing crew.

Due to the boggy condition along some of the stretches, which has made it impracticable to lay sections of welded pipe, the line has been stove-piped welded, that is, the line has been welded in place joint by joint.. Three beads and sometimes four have been needed. As each 40-foot joint of pipe is welded, it is laid in the 36-inch ditch by a diesel tractor equipped with a sideboom. Through most of the country crossed the ditch had to be back-filled as soon as the pipe was laid to prevent the pipe from rising. At intervals the line was plugged and tested with 100 pounds of air pressure, and so far few pinholes have been found.

There were seven river and bayou crossings and with the exception of Trinity River all crossings were made with little trouble. The Trinity River crossing is expected to be made immediately, as the contractors have waited until the high water receded. The weight of the pipe at these crossings was increased to 43 to 48-pound and was received arc-welded. At Hilderbrandt and Alligator Bayous, extra heavy coatings of enamel were applied due to the water being salty.

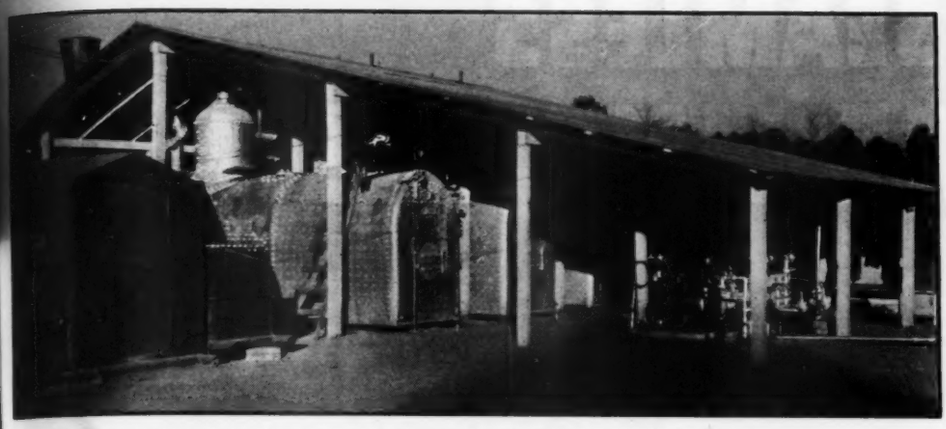
This line is being laid as part of a program to market and utilize Humble Oil & Refining Co. natural gas reserves. There is also under construction a combination low-pressure and high-pressure gasoline plant located in the Tomball field. The plant and a two-line gathering system to low and high-pressure wells is under construction. The Humble-Port Arthur line will have a daily capacity of 60,000,000 feet of gas, which will eventually be fed by feeder lines from the Dickinson field in Galveston County and the Amelia field in Jefferson County. The company already operates a gas system in the city of Tomball and has one 37-mile gas line to Long Point, Old Gulf and Boling, where it is furnishing gas to Texas Gulf Sulphur Co.

Diesel tractor riding "stomper" used to force the pipe into the ditch at sections where quicksand made digging impossible as sand soon refilled the trench. At left, another tractor is mired in the quicksand.

A.S.T.M. Regional Meeting

Two technical symposiums, one on lubricants and the other on corrosion testing, are to be the features of the 1937 A.S.T.M. regional meeting to be held at the Palmer House, Chicago, March 2-3. The meeting is being held during A.S.T.M. committee week when some 100 meetings of the society's committees will be held. The committes will review their research programs and discuss existing specifications and tests.

OPERATING IDEAS

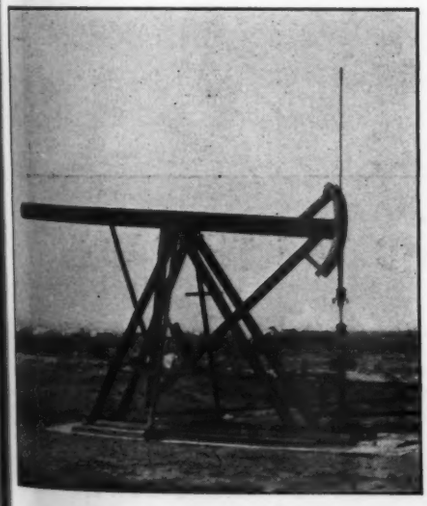


Oil Field Boilers Housed to Reduce Heat Loss

In the northern Louisiana fields some operators have adopted the practice of building sheds to house their oil field boilers and boiler-feed assembly, the building being completely insulated on the north and east. Thus the building serves to protect the boilers from prevailing winds, thereby acting to conserve the amount of fuel needed. The assembly also serves to protect the boiler equipment from rains and provide a shelter for the boiler operator.

Pumping-Jack From Old Pipe

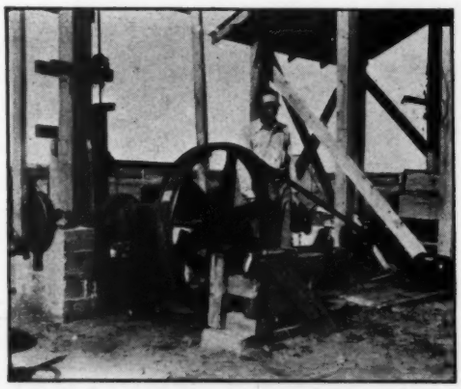
The pumping-jack shown here is worthy of note in that it is constructed almost entirely from old pipe and during its service has proven very satisfactory for pumping an 800-foot well near McCamey, Tex. The following sizes of pipe were welded to form



the jack: A 6-inch pipe for the beam, 4-inch pipe for the legs and 2-inch for the braces. The arc is made from an old wagon tire.

Novel Use for Old Differentials

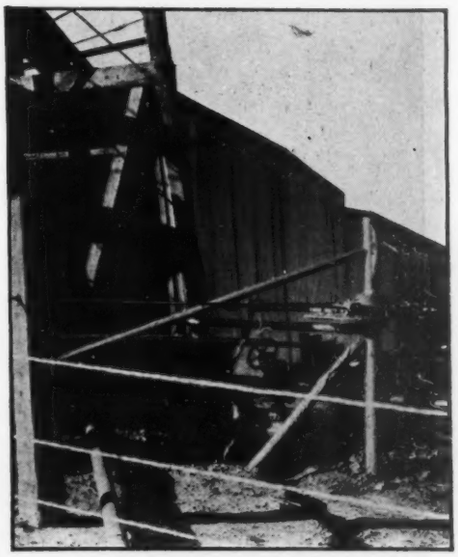
An oil company operating near Odessa, Tex., devised the pumping-jack shown here using an old automobile differential to further reduce the pumping speed of the jack. A 3-horsepower motor is belted to a pulley, which in turn is direct connected to a differential mounted on concrete building blocks. A pitman fastened to a plate on one end of



the axle drives the walking-beam used to pump the well. Approximately 40 gallons of water per minute are pumped from the 40-foot well by this installation, thus supplying sufficient water for the entire lease.

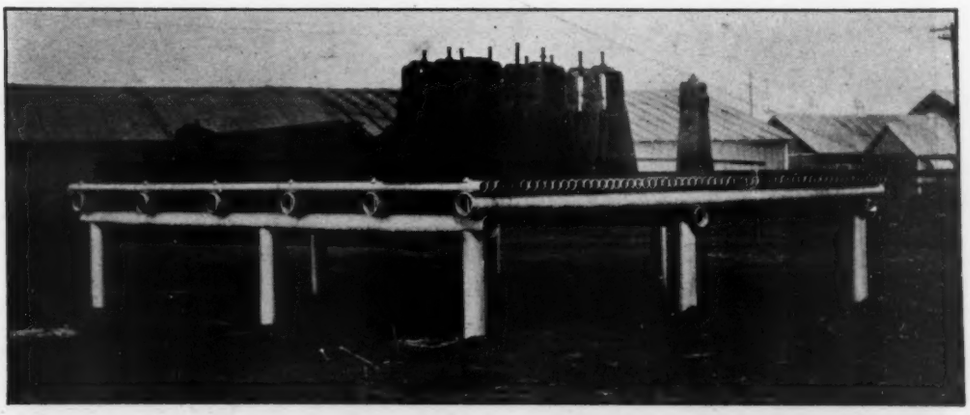
Sprocket for Power Takeoff

An oil company operating in Gray County, Texas, has designed a power takeoff using a sprocket from the calfwheel originally used



to drive the sand wheel. Operating on this sprocket is a 6-foot chain which gives the proper stroke. The pull-rod attached to the chain fastens with a stirrup to a V-beam adapted to the walking-beam of the geared pumping unit. Thus the movement of the walking-beam is transmitted by means of the chain sprocket to stroke the pull-rod.

Platform Constructed From Old Pipe and Tubing



If you have a lot of old pipe around the yards and desire to make a strong platform upon which heavy equipment can be stored, you might follow the construction clearly shown here. The novel idea incorporated in this particular platform is the floor made of old tubing.

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Controlled Vertical Drilling Is Widely Used in California

By T. P. SANDERS

For several years California operators have been giving careful attention to all phases of the problem of drilling straight holes, and at the present time it is safe to state that both thought and practice concerning this important subject have advanced farther here than in other oil-producing districts. Difficulty in pumping crooked wells was the chief factor leading to stress on vertical drilling, but lately it has been found that straight wells could be drilled more rapidly than was formerly thought possible to drill any kind of a well. For this reason the present interest in straight drilling is largely for the sake of saving drilling time, avoiding fishing jobs, and reducing wear and tear on drilling equipment.

It should be mentioned that another advantage in straight drilling is in reference to geologic records. From the ordinary deviation tests vertical corrections are easily made for tops of important formations, but unless directional surveys are made, horizontal corrections are impossible, and this often constitutes a very sizeable error in mapping steeply dipping sediments on California structures.

Most of the major operators in California drill their own wells. This circumstance led to much of the early interest in straight holes, since the concern drilling a well would later be confronted with the problem of producing it, and of making use of its well log to the best advantage. However, the saving in drilling time due to straight holes has caused many contractors to take as much interest in the subject as the producing companies who do their own drilling. Tests for deviation from the vertical are now made as an aid in keeping the hole straight. For this reason they are taken frequently and as close to the bottom of the hole as possible so that it will be known when the bit first begins to leave its course. If tests are taken infrequently or are made 150 feet or more off bottom, as it often the case, by the time it is recognized that the bit has left its course the hole is often so crooked that plugging back, or straightening in some other method is necessary. Work of this kind always calls for lost time and considerable additional expense, but some California companies have reached the conclusion that it is cheaper to plug back and redrill a hole 4 degrees off than it is to bring the course back to the vertical by reducing the weight on the bit. This contention was borne out in the Fitts field of Oklahoma where it was found that six additional days of drilling were usually required when it was found necessary to straighten a hole by "holding up on the bit," whereas only four or five additional days were sometimes required to plug back and redrill a hole.

When vertical tests are used as a guide in drilling, far greater accuracy is demanded than when the tests are used merely for the purpose of determining whether or not the hole meets specifications. In the past it has often been contended that readings within 1 degree were sufficiently accurate. At present, however, a test showing a deviation of 1½ degrees causes the operators to take steps to bring the course back to the vertical. If the next test shows 1 degree it indicates that this is being accomplished, but if the reading is 1 degree off, the deviation may actually be 2 degrees, and the drillers have been seriously misled. Drilling speeds are selected to a large extent from the results of deviation tests made in the well being drilled or in other wells drilled at nearby locations.

In all localities the bit tends to cut a vertical hole unless it is forced away from such a course. The disturbing force may be the result of contacting formations of varying hardness which dip steeply. Many California operators have adopted the practice of applying little weight to the bit when noticeable stratigraphic changes are encountered. At all times high rotary-table speeds and light weights are favored. Speeds as high as 300 revolutions per minute have been used, but rotary tables seldom are able to stand this speed consistently. Usually speeds run between 150 and 175 revolutions, since above these speeds a critical point is generally found where vibration is too great. If equipment would stand the added strain economically, many operators would prefer to use speeds above this critical vibration point rather than having to slow down below it. As in the case of an automobile, there are certain speeds on a rotary rig, depending on factors such as depth of hole, where vibration reaches a maximum, and the vibration is then reduced by either increasing or reducing the speed of the rotary table.

BALANCED DRILL COLLARS

One company has brought about very noticeable results by the use of balanced drill collars. Where crooked holes could not be accounted for otherwise it was decided that an off-center bore-hole through the drill collar, which left unequal wall thickness, had caused centrifugal force during fast rotation to misguide the bit. By properly centering the bore-hole throughout the length of the drill collar, thus giving it perfect balance, trouble due to this cause has since been avoided.

Coring often is the cause of crooked holes, since the reduction in the size of the hole when coring is started, and the flexibility of the core barrel make straight drilling difficult and sometimes impossible. If time permits, some companies avoid this trouble by coring only a few feet at a time, and by drilling the full-sized hole down below the depth to which the core drill was run before the next core is taken. When the information to be gained by coring is needed immediately, the coring is done all at once with little regard given to keeping the hole vertical. Then the core hole is tested for deviation, and if it is any appreciable distance off the vertical, it is plugged back with cement to the full-sized hole.

Probably the most recent development in straight-hole drilling is the use of sleeves on drill-collars, which are made with several tons of lead rings around the collar inside of a steel casing. It is well known that force must be applied to a drilling bit to make it cut, just as a common hand drill must be pressed against a piece of sheet metal if a hole is to be drilled. This force is applied to a drilling bit by its own weight plus the weight of the drill-collar and part of the weight of the drill-pipe in the hole above it. This causes the lower joints of the drill-pipe to be in compression while drilling is in progress, which in turn tends to cause crooking of the drill-pipe a short distance above the bit. When the drill-pipe is forced against the wall of the hole, the force effective on the bit may be directing it at an angle slightly off vertical, and this angle may increase as the bit follows its directed course. By concentrating enough weight on the drill-collar immediately above the bit the compressive force on the drill-pipe can be eliminated or reduced to a stress which will not cause crooking. The bit and drill-collar on the end of the drill-pipe bear a close resemblance to a plumb-bob on a string. Also, since the sleeve closely fits the hole for a distance of about 40 feet above the bit, there is little chance of forcing the bit very far off of its course.

The desirability of concentrating weight immediately above the bit has long been realized, but the difficulty of devising a means of fishing out a large heavy object occupying practically the entire diameter of the hole has until recently prevented its practical application.

Apparently this difficulty has been overcome by the design of the lead drill-collar sleeves on which patents were recently issued, and which are now being used in the drilling of several California wells. When a twist-off occurs just above the drill collar it is necessary to remove the sand and shale from around the collar by "washing over," then an overshot is used to catch the collar. But when the collar is covered by a sleeve, this cannot be done, since only three-quarters inch clearance is left between the sleeve and the wall of the hole.

(Continued on Page 62)

Interior of Iraq Petroleum Co.'s water pumping station on the Lesser Zab river in Iraq

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THE LAYNE WIRE WRAPPED SCREEN

Perforated Casing Helps Maintain Production in Little Signal Hill

By DONUIL HILLIS
Chanslor-Canfield
Midway Oil Co.

The area known as "Little Signal Hill" lies 2 miles southwest of Taft in sections 21, 22 and 27, Township 32s, Range 23e, Kern County, California. The present boom which has resulted in so many wells being drilled was caused by the completion of Chanslor-Canfield Midway Oil Co. No. 17, on section 21-32s-23e.

The initial production June 21, 1936, for this well, was 100 bbls., 17.6 gravity and a cut of 44 per cent. Ten and three-quarters inch casing was cemented at 1,425 feet and the effective perforations in the 6⅝-inch liner extended from this point to the total depth of 2,105 feet. For 21 days it increased steadily until the peak was reached on July 12, when it produced 1,822 bbls. of net oil with a gravity of 17.5 and a cut of 4 per cent.

Shortly thereafter it declined to 1,000 bbls. and maintained this as a settled rate, declining very slowly until other wells were drilled in close proximity. Lost circulation from an adjacent drilling well finally killed it, and the subsequent reduction of formation pressure from 450 pounds to 330 pounds has had its effect, so that in January, 1937, the well was producing only 300 bbls. per day.

Such production from 2,000 feet is very attractive in these days of deep drilling. In a short time the southwest part of section 22 was bristling with derricks because of the small acreage subdivisions. This has given the name "Little Signal Hill." It is on the axis of the Spellacy anticline, which is a very sharply folded feature on the east flank of the Temblor range and separated from it by a syncline.

Figure 1 shows the new production is along the axis of the Spellacy anticline in the west part of section 22 and east part of section 21. The location of the accompanying cross section from C.C. M.O. Co. No. 21, section 21-32s-23e, to Shell Perris No. 1-A is also shown.

Producing Formation

The rocks penetrated by the drill in this region are of Upper Miocene and Lower Pliocene age. They are easily distinguished lithologically by the shales which in the Pliocene are easily crumbled and of a bluish gray color in contrast to the very hard brownish gray shale of Upper Miocene age. The Pliocene beds consist of the Etchegoin formation overlain by the San Joaquin clays. They were deposited as an overlap on the eroded surface of the Upper Miocene beds by a sea which had its margin just west of the Spellacy anticline. The formation is missing or very thin on the anticline and increase to a thickness of over 4,000 feet to the east. Numerous fossil pelecypoda, gastropoda and crustacea characteristic of a littoral zone are present. These are almost totally lacking in the underlying Miocene rocks, the shales of which represent an offshore deposit.

The production which has caused the present development comes from sands within the Monterey shale of Miocene age, and also from the shale itself. Following its deposition, which amounted to about 6,000 feet, came a period of uplift with continental conditions of high relief. Fast moving streams eroded the Monterey shale deeply and carried granite boulders with diameters up to 5 feet eastward into this area. Marine conditions followed with the deposition of sand. This coarse detritus of Upper Miocene age resting on the brown shale of Monterey age is called the Santa Margarita formation. Basinward and to the north, it grades into shale and diatomite.

At the outcrop in section 28-32e-23e, it is underlain by 600 feet of sandy shale and diatomite.

A.P.I.—Presented before San Joaquin Valley chapter meeting held at Taft, California

This portion of the Monterey is rather soft and unconsolidated, but beneath it comes a section which consists of hard and extremely hard gray brown shale. In the upper 2,000 feet are several beds of sandstone totaling about 200 feet from which the production is obtained. Their mineral composition is the same as that of the granite boulders of Santa Margarita age. They are the prophecy of what was to come, the difference being that only slight uplift occurred during their deposition and fine grained sands were deposited, whereas during the following Santa Margarita time a pronounced uplift took place and great boulders from the same source were brought to this locality.

Production has been obtained for many years in the area known as "25 Hill" from the Pliocene beds on the flank of the Spellacy anticline only a half mile northeast of the present activity, and also 2 miles farther south along the axis and east flank.

The production immediately northeast of the "Little Signal Hill" could not be extended farther toward the axis because the Pliocene beds come to the surface. A 65-degree east dip makes the underlying sands in the Miocene so low structurally that they produce only water.

The relation between the Pliocene and Miocene oil is shown by Figure 2. Zone B is generalized. Near the outcrop it is a single zone as shown, called Mulinia and belongs to the upper part of the Etchegoin.

Basinward it is overlapped by the Scalez zone, and from the vicinity of the Shell Perris No. 1-A eastward both zones occur, but are represented in the diagram by the single line entitled "Zone B." Between these two closely spaced zones is the contact separating the San Joaquin clay from the Etchegoin.

Although the Chanslor-Canfield Midway Oil Co.'s well caused the present development, the production in these sands was actually discovered in August, 1929, when the Union Oil Co. completed its No. 1 Western Petroleum in the NE cor. of NW quarter section 27-32s-23e. Drilled originally to 4,950 feet, it was plugged to 2,300 feet and produced 40 bbls. per day. The sands thicken southeastward and the well was located on the axis, but the latter plunges and so these sands being lower structurally were only partly saturated.

Another well drilled by Union, No. 1 Williams, was located close to the axis and extended pro-

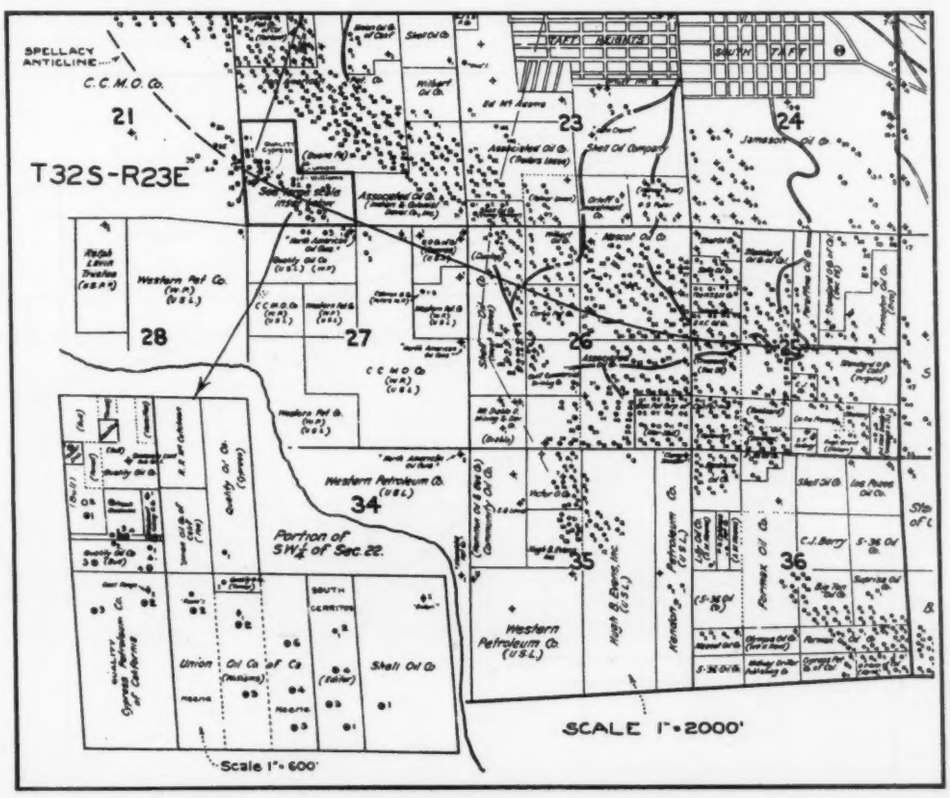


Fig. 1—Map showing new production along the axis of the Spellacy anticline

duction farther to the northwest where it had the benefit of a higher structural position. In drilling to 2,888 feet, it penetrated the zone furnishing most of the present production but was plugged to 1,518 feet. Completed November 19, 1929, it produced 250 bbls. of clean 14-gravity oil per day. The well was shut in and the district remained idle until August, 1931. Four wells were completed on adjoining leases of about equal depth and production. These have since dwindled to about 30-bbl. producers, except for one well capable of 100 bbls. per day.

The next development took place in 1935. The Chanslor-Canfield drilled No. 17, on section 21-32s-23e, to a depth of 1,983 feet, and suspended operations in August, 1935. Eight months passed before drilling resumed and the well was completed. In the meantime, the Quality Oil Co., which operated the adjoining lease, completed No. 2 Cypress with a total depth of 1,986 feet and an initial production of 340 bbls. of 16.2 gravity.

An unusual feature of the area is the amount of production that is coming from shale. In C.C. M.O. Co.'s No. 17, on section 21, the perforated interval would include about 40 feet of fine-grained sand mostly in thin streaks interbedded with shale. This, with a 450-pound gas pressure, would hardly seem sufficient to account for the peak production of 1,800 bbls. per day.

The increase is partly obtained by the cavernous condition that results from the large quantities of sand made by the wells and partly by the great porosity of the fractured shale.

The northeast flank of the fold has dips as great as 70 degrees and the southwest up to 50 degrees. The numerous highly siliceous streaks of shale are too brittle to participate in such abrupt folding. Some of the cores come out badly shattered, or if intact will shatter like glass at the blow of a hammer. The thicker zones of these siliceous shales have acted as competent layers to a slight extent and have slid over the softer, more massive shale. This is shown by the distortion and frequent small displacements noted in the cores. Much porosity has been developed along the axis by shattering and differential folding of the more siliceous shales.

Their permeability is shown by the loss of circulation in shattered shale in one well which mudded up another with a bottom-hole location 600 feet away in the short space of 30 minutes.

Further evidence of the production obtained from the shale is furnished by C.C.M.O. Co. No. 24, on section 21-32s-23e. This test was drilled to 2,700 feet, from 2,223 feet to the bottom was all shale, with the exception of a 4-foot streak of poorly saturated sand, and yet when this interval of 475 feet of shale was tested, it produced as much as 140 bbls. per day. Another unusual feature is the low oil-gas ratio. Initially, C.C.M.O. No. 17 would flow by heads, but when agitated by pumping the production increased two-fifths and the gas ratio diminished from 1,500 cubic feet per barrel to 225.

The name "Little Signal Hill" is fittingly applied to the hill adjacent to the west line of section 22, where the derricks are so closely spaced. This, however, is only a part of the development. The anticline is several miles long. Farther southeast, in section 22 and in the north part of section 27, other wells are being completed with initial production as great as 800 bbls. per day.

Controlled Vertical Drilling

(Continued from Page 59)

Therefore, a fishing tool has been designed to engage the steel casing of the sleeve. It is lowered on the drill-pipe and screwed on by means of coarse threads. If the threads on the sleeve are covered with sand or other material, the same fishing tool can be employed to wash away the material, using water which is pumped down through the drill-pipe.

After the fishing tool has been screwed on, water can be forced from the drill-pipe through channels under the lead rings down to a point just above the bit from where it must return upward outside of the sleeve, washing away sand and shale to free the sleeve. A sand trap is provided to keep the passages under the lead rings from clogging up. When the sleeve has been washed free, it is believed that it will generally be possible to fish out the drill-collar and bit, since a means is provided of jarring the bit loose with the heavy sleeve. In case this fails, some iron bumper blocks can be milled down to permit removing the sleeve without the bit and drill-collar, so that other methods can be used to dislodge the bit.

The lead sleeve turns with the bit, since it is joined to the drill-collar at its lower end by a clutch. The sleeve assembly is free to move up about 5 feet on the drill-pipe before it is stopped by the bumper blocks. This feature makes the jarring possible. Most lead sleeves so far used have been 38 feet long and were used on 40-foot drill collars. Their weight varies with the size of the hole being drilled. Some have been made up using over 5 tons of lead.

The first drill-collar sleeve was used in Signal Hill field in drilling from 2,765 to 3,930 feet. This test was too short to give any essential information. The next test was made near Bakersfield where a well was drilled from 1,080 feet to 5,000 feet in 5½ days with a maximum deviation of 1½ degrees. The best record so far established using lead sleeves was in Kettleman Hills where only 152 hours of drilling time were required to drill from the surface to the top of the Brown shale at a depth of 5,608 feet. Here again the maximum deviation was 1½ degrees. The fourth test was made in the Ventura field where straight drilling is more difficult. Because of much coring the progress was rather slow, and the well was completed 3½ degrees off at the bottom. Four more wells are now being drilled using lead drill-collar sleeves, and immediate plans call for the use of more of them.

Careful consideration of the straight-hole problem in California is not confined to a few large operators, but is widespread over practically all parties concerned with drilling. This interest has played a major part in reducing the average drilling time in some fields as much as 40 per cent in late years. Other factors such as control of drilling fluid and improvement of bits have also contributed to this reduction. Concerning straight drilling, it is freely admitted by all executives and engineers that the most important factor is the drilling crew. Greatest success in this line has been accomplished by executives who have made a point of "selling" the drilling crews on straight-hole drilling and then leaving it to them to get the desired results, placing on them as few limitations as possible. It is generally believed that with a given bit in a given formation being rotated at a given speed, there is a certain weight which will give the greatest efficiency when applied to the bit. The men drilling the well are in the best position to select weights approaching this ideal condition.

The only undesirable result of keeping holes straight was an increase, noticed by one company, in the number of strings of 8⅝-inch casing which parted after they were set and drilling was continued below their casing seats. This often occurred in strings between 4,000 and 6,000 feet long which were cemented at the bottom. The increase in trouble of this kind was believed due, at least in part, to straighter holes, because a crooked hole would "dampen" the vibration of the casing caused by the drill-pipe rotating inside of it. It was satisfactorily proved that this vibration was the cause of the parting when it was found that additional cement behind the casing gave no noticeable improvement.

The method by which this trouble was corrected is worthy of note. It was noticed that the V-threads in the casing gave an ideal place for fracture to start. Steel somewhat resembles paper, cloth, or as a more extreme example, cellophane, in that it fractures more easily if given a place for the fracture to start. Apparently the sharp V-threads were providing a start. Casing with round threads was obtained with the same number of threads to the inch. It has been reported by this company that their straight-hole troubles have thus been eliminated.

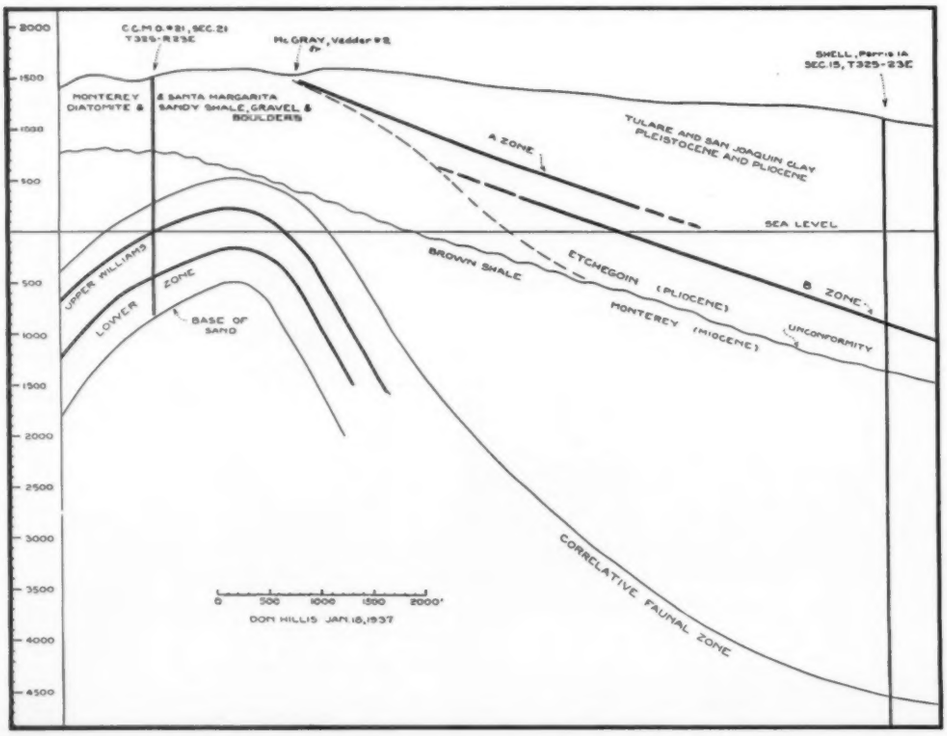


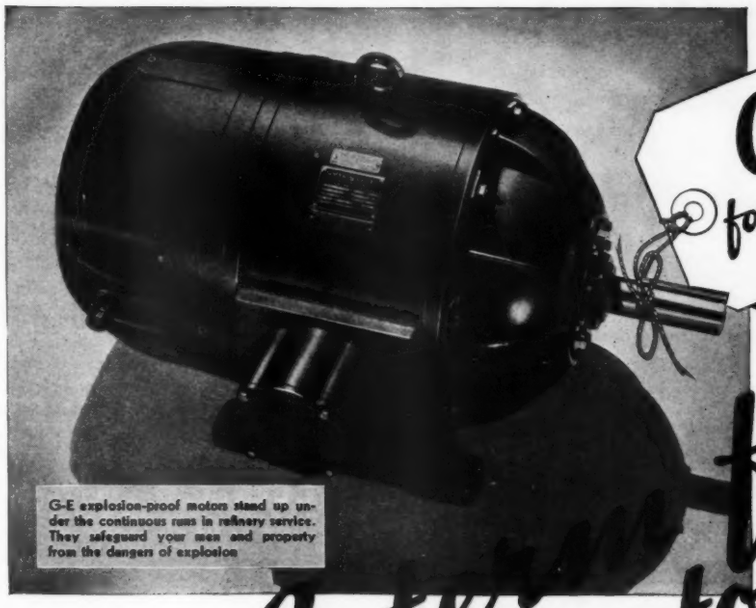
Fig. 2—Cross section of the Spellacy anticline in the "Little Signal Hill" field

Canadian Gas Production

OTTAWA, Ontario.—Natural gas production marketed from all Canadian fields in November was 2,469,043,000 feet compared with 1,961,024,000 in October and 2,312,485,000 in November, 1935. In the first 11 months of 1936 Canada produced 24,019,708,000 feet compared with 21,830,004,000 in the same period of 1935.

Imports of mixed (natural and artificial) gas into Canada in November amounted to 8,764,000 feet valued at $9,382 compared with 8,424,000 feet valued at $6,135 in October.

The figures of gas production do not include Turner Valley gas used for repressuring or waste.



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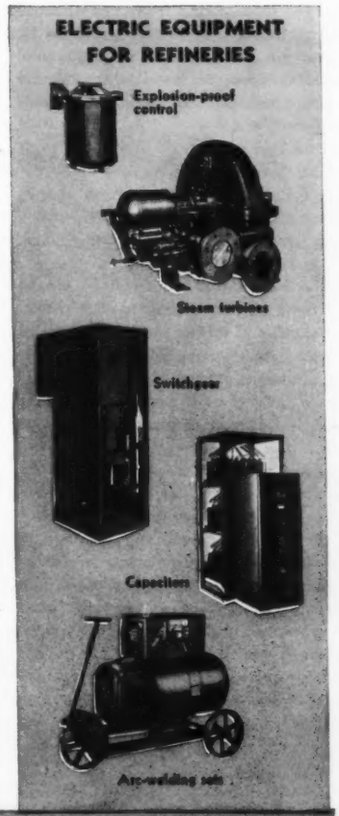


020-309

GENERAL ELECTRIC

Progress in METALS

By W. L. NELSON

Metallurgical Terms

The Working of Metals and Alloys

All metallic parts other than castings must be fabricated or worked into the desired shape. Such material is referred to as wrought—such as wrought iron, wrought steel, etc. However, two methods may be employed namely, cold work and hot work. By cold work we refer to an operation of shaping the metal at or near room temperature whereas the term hot work refers to shaping operations conducted at elevated temperatures. At room temperature many materials such as steel and machinery brass are somewhat brittle and shaping operations result in greater hardness and strength but at the same time more brittleness and a greater tendency to corrode. Ductile materials are sometimes shaped by cold work but most materials become so brittle that they are not suitable except for uses which require little strength or shock resistance. Examples of methods of conducting cold work are:

1. Drawing—wire and rods.
2. Rolling—plate, bars and rods.
3. Stamping (quick blow by die) intricate shapes made out of thin metal.
4. Punching (quick blow by die) producing holes, dents, etc.

The detrimental effects of cold work can be erased to some extent by annealing or heating to such a temperature that the particles of broken material that compose the cold-worked article are able to weld themselves into new stress-free particles.

Hot work may be defined as a mechanical forming operation conducted at such a temperature that the grains or particles of material can flow or reform themselves into particles that are free from mechanical strain. This flowing or welding of particles takes place simultaneously with the shaping operation so that as soon as a particle becomes distorted by the shaping operation, it flows and adjusts itself to the surrounding grains of material thus forming a uniform stress free piece. Hot work has the same general effect as cold work, that is to increase the strength and hardness, but the effects are not as pronounced and the finished piece is not brittle or subject to corrosive action. Hot work is the preferred method of fabrication for all materials that tend to become brittle by cold work but it is more expensive. Methods of conducting hot work are:

1. Forging — tools, machine parts, shafts, axles, gears, etc.
2. Rolling—sheet, plate, rods, bars, etc.
3. Pressing (steady pressure rather than a blow)—large blocks, plates or machine parts which must be particularly sound (armor plate, gun barrels, etc.)

The operations of forging and rolling tend to work the surface of the part whereas pressing affects the material in the interior of the piece.

Although the main purpose of hot and cold work is to shape the piece, these operations also result in superior physical properties. Work results in (1) finer particles of material; (2) greater strength; (3) the mixing of impurities so that they are equally distributed throughout the piece, and (4) soundness by the closing of holes, etc. The superior properties produced by working are indicated in the following table. (Crook Iron Trade Review—No. 27, 1924). The size of the grains is an indication of the amount of work that has been conducted.

Specimen	Ave. grain size—mm.	Ultimate strength	Elastic limit	Elongation
1	.0596	58,300	.....	11
2	.0257	63,500	37,800	23
3	.0123	67,100	47,800	26

The Effect of Quenching and Tempering Carbon Steels

Quenching may be defined as rapid cooling by immersing the metal in a bath of liquid. In the case of the regular carbon steels, increased hardness and some brittleness is caused by quenching. However, slight changes in the rate of cooling greatly affects the hardness and brittleness of the quenched piece and hence, the usual method of producing a hard metal is to quench the piece and then temper or modify the hardness and brittleness by reheating to some temperature below the original quench temperature.

Thus, the method of hardening carbon steels is to quench from a high temperature and temper or reheat to a lower temperature. Hardening is practiced on tools and the like but even widely used parts such as sucker-rods, gears, shafts, engine parts and wire are sometimes quenched and tempered. As an example, the strength and hardness of a 0.4 carbon forging or machine steel are shown in the following table. The hardness is given in comparative units only using the hardness of the annealed steel as unity. The table emphasizes the brittleness of quenched materials and the restoration of toughness by tempering.

EFFECT OF QUENCHING AND TEMPERING ON A 0.4 CARBON STEEL

Treatment—	Hardness (relative)	Strength lb. per sq. in.	Elongation in 2" specimen %	Machineability
Pure iron	1	40,000	40	Good
0.4 steel—annealed—slowly cooled	3.7	80,000	15	Fair
0.4 steel—quenched in cold oil	160.	200,000	None	Impossible
0.4 steel—quenched and tempered to 400° F.	60.	160,000	4	Fair
0.4 steel—quenched and tempered to 600° F.	20.	125,000	10	Fair

Rotary Drilling Hoists

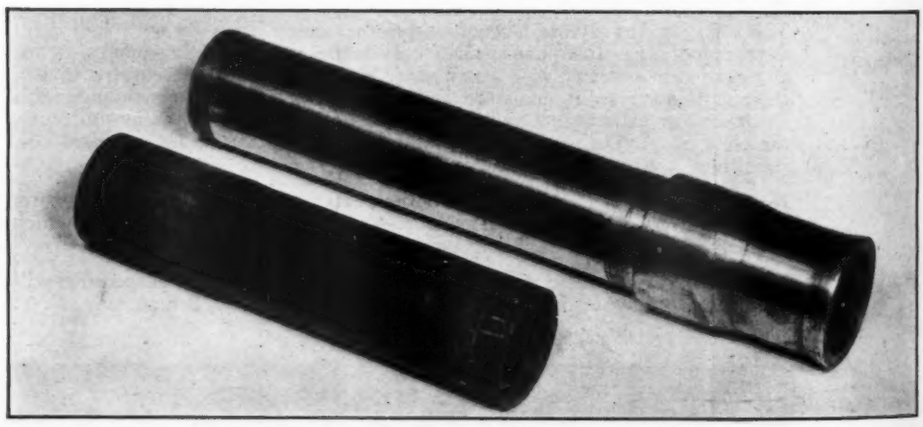
The drum flanges or brake flanges which constitute a part of the drawworks or hoisting equipment in a rotary drilling set-up are subject to severe conditions. Some of the brake flanges are water cooled and others are not but for either service the International Nickel Co. recommends a steel of the following composition:

Carbon, per cent	0.2 -0.3 (0.2 preferred)
Nickel	1.75-2.0
Molybdenum	0.3 -0.35
Manganese	0.55-0.75
Silicon	0.2 -0.35

After suitable heat treatment, the finished steel has the following approximate properties:

Tensile strength, lbs. per sq. in.	95,000
Yield point	65,000
Elongation in 2", per cent	22
Charpy impact, ft./lbs.	35

A New Corrosion-Resistant Wear-Resistant Alloy



Alloys produced by the addition of metallic boride crystals to nickel, are found to possess exceptional hardness and a high resistance to corrosion, abrasion and heat. Such a material is marketed under the name of Colmonoy No. 6, by the Colmonoy Co. of Los Nietos, Calif. This material contains approximately 75 per cent of nickel and 25 per cent of metallic boride crystals, and resembles pure nickel in appearance. It is supplied as welding rod for overlay purposes or as small pigs which may be melted and cast.

In connection with refineries, this alloy has been found suited for use on liquid-end rods, centrifuged pump sleeves, valve plugs, etc., because it resists corrosion or abrasion, and wears smoothly. It is found to be unusually free from the checks and cracks that are incident to the use of some hard-facing materials.

The accompanying illustration shows a centrifuged pump sleeve before and after being used to pump sulfuric acid and abrasive laden fluids. Note that the mild steel part has been completely eaten away and that the alloy overlay is still in good condition, even after six months of service.

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Oil Shales Gaining Commercial Importance in Central Europe

By M. RAUD
Director of Statistics of the Fuel Industry

According to computations made by the Esthonian National Power Board, the country's supplies of oil shale occupy a position of pre-eminent importance among the available sources of power production, which include also peat beds, forests and waterfalls.

Test drillings have shown Esthonia's oil-shale resources to extend over an area of more than 3,000 square kilometers. The so-called "Kukruse" stratum, characterized by the presence of oil shales, which forms one stage of the Cambrian-Silurian system, extends throughout northern Esthonia, the deposit being something like 130 miles long and 15 miles wide, in a Paleozoic structure which dips gently southwards about 3 meters to the kilometer. The beds range in thickness from a few inches to 3 feet. From 1 square meter of surface 1 to 2 tons of oil shale are obtainable; from 1 square kilometer 1,000,000 to 2,000,000 tons; so that the supply available over the whole of Esthonia may be estimated at a figure between 4,500,000,000 and 6,000,000,000 tons, corresponding in energy equivalent to between 2,250,000,000 and 3,000,000,000 tons of coal.

The first printed records concerning the oil shales of the country date from more than 150 years ago. However, it was not until some time during the World War that the idea of exploiting these formations industrially began to make headway in St. Petersburg. It owed its inception to the necessity of having available a local fuel supply, in consequence of the irregularity with which such items were being delivered in that city as a result of war conditions. After the completion of a series of tests and geological investigations, the Russian government decided to start excavations in Kohtla planning a yearly production of 500,000 tons of shale. The preliminary work, however, was interrupted by the outbreak of revolutionary activities, and the authorities in charge of the German occupation were in turn unable to start the work. In November, 1918, the Esthonian government took over the Kohtla workings from Germany, carried the preliminary enterprises through successfully and began development in earnest. Exploitation has continued uninterruptedly down to the present.

Eighteen years ago there were a few scattered engineers and other experimenters who knew that the oil shale could be used as a fuel or that from it could be distilled an industrially important oil. Even after these facts were known it was a long time before the right sort of firing installations and distilling outfits could be prepared. This ground has since been covered, however, and covered thoroughly, and at the present time oil shale has an assured place as a direct heating agent, the cheapest fuel, indeed, employed in Esthonia. The distilling plants producing oil from the same material can turn out a great variety of oils and oil products that have proved themselves well able to compete with the best rivals in their class.

TABLE 1—CHEMICAL COMPOSITION OF AIR-DRIED OIL SHALES STRATUM

Stratum—	A I	B V	C VII	D IX	E XI	F XII
	%	%	%	%	%	%
H_2O	3.1	1.3	2.7	2.1	2.5	2.3
C	35.6	37.5	35.8	25.4	37.4	34.1
H	4.2	4.5	4.2	3.1	4.4	4.1
O	9.9	9.6	10.1	7.1	9.6	9.2
N	0.1	0.1	0.1	0.1	0.1	0.1
S	0.7	1.5	0.6	0.4	0.8	0.5
CO_2	10.3	13.1	8.6	10.4	9.4	12.3
SiO_2	15.3	9.4	18.0	26.4	14.7	14.4
Fe_2	1.3	2.9	2.0	1.9	1.8	2.0
Al_2O_2	4.0	2.1	4.0	4.6	4.1	3.5
CaO	13.3	16.8	11.9	13.8	12.6	15.6
MgO	0.6	0.5	0.9	1.4	0.7	0.6
$K_2O + Na_2O$	1.9	1.2	1.9	3.1	2.3	2.0
Total	100.3	100.5	100.2	99.8	100.4	100.6

General Analysis—Water, 14 per cent; combustible material, 43 per cent, and ash, 43 per cent (9 per cent CO_2 + 34 per cent mineral ash).

EXTRACTION AND UTILIZATION

At the present time there are five independent establishments exploiting oil shale; one is a state concern and the others private companies. The state establishment started operations in November, 1918, and the first of the private companies began four years later. Up to the end of 1935 the total production of oil shale amounted to 6,005,095 tons. Of this amount, 4,700,000 tons have been utilized directly as a fuel and 1,300,000 tons as a source of oil production by distillation; yielding, in round numbers, 245,000 tons of crude oil.

During the period from 1929 to 1933 about 500,000 tons of oil shale were taken out and from 1934 on the annual production has been 600,000 tons. During the same length of time, owing to depression conditions, there was a falling-off in its direct use as a fuel, but to make up for this the quantity used for the production of oil has advanced steadily each year; in 1934 and 1935 only 350,000 tons reached the market as fuel shale, but from the 250,000 tons of shale utilized in distilling plants 47,000 tons of crude oil were obtained every year.

As a railroad and factory fuel, this material replaces coal, wood and peat. Like peat, it cannot be transported farther than 200 to 300 kilometers owing to the high ratio of its weight to its calorific contents. As a result, its importance as a fuel does not extend beyond the boundaries of Esthonia but within the country it has been able to replace coal almost completely. Among the less advantageous features of oil shale as a fuel may be mentioned the considerable ash percentage, requiring the exercise of much ingenuity on the part of fuel engineers in the effort to provide means of disposal of this waste; the designing of fire-boxes for use on railway locomotives and in factories has also been the object of considerable engineering effort. From 1926 on, all engines operating on Esthonian railways have been using shale as a fuel.

At present there are four establishments engaged in distilling operations in Esthonia—one a state institution, the other three private enterprises. Together they produce, in round numbers, 75,000 tons of crude oil. The creation of these plants was preceded by a long period of experimentation.

State oil-shale distilling plant of 40-ton daily crude oil production capacity

In the distilling outfit employed in the state establishment the oil is processed in vertical generators equipped with internal firing. The experimentation with this type of unit for the distillation of shale oil started in 1919; a small-sized trial installation was put into operation in Germany in 1920 and a larger one in Esthonia in 1921. The results achieved with the experimental outfits were finally considered such as to justify the erection by the state establishment of six vertical units, for a throughput of 200 tons of shale in 24 hours, these being of the type designed and built by Pintsch, of Berlin. The builders guaranteed a yield of 18 per cent. A 300-ton unit was subsequently erected.

After a period of experimentation, two of the private companies installed the horizontal or tunnel type of outfit, with external firing, capable of treating 500 tons of shale every 24 hours. In this kind of distilling unit the operation proceeds without interruption for three or four weeks and is then suspended for a few days for the cleaning out of the coke.

At the plant of another of the private com-

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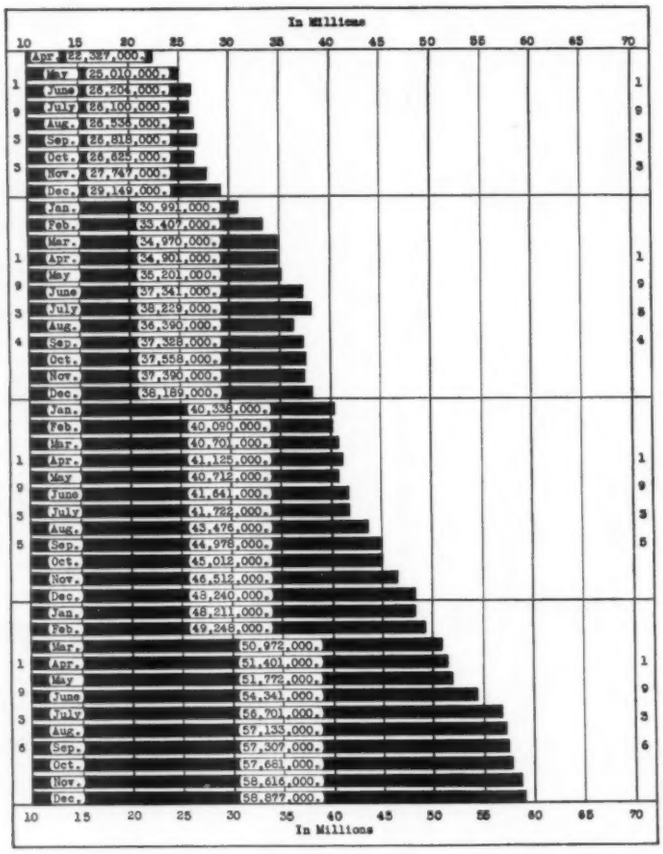

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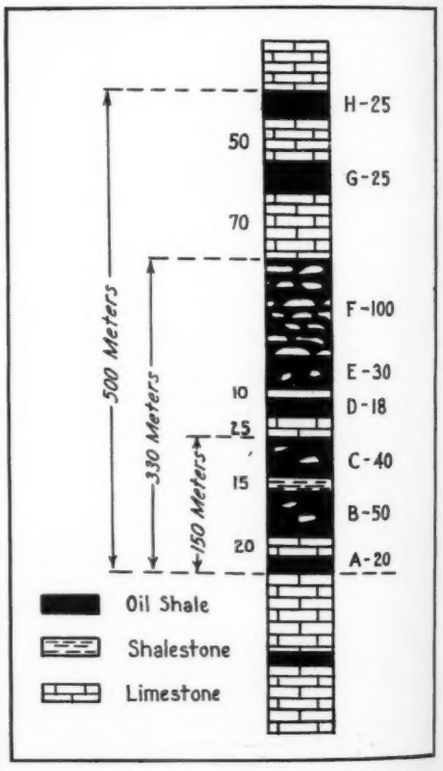
panies the distillation is effected in 25-ton Davidson rotary cylindrical furnaces, externally fired. The production of oil by this particular firm varied from 2,000 to 4,000 tons a year, in the period between 1931 and 1933. In 1934 the plant turned out 10,000 tons of crude oil. The Davidson 25-ton type of rotary furnace can be run for three or four months without closing down for cleaning out.

All three types—the vertical with inside firing, the tunnel model with outside firing and the 25-ton Davidson cylinder type—give a good account of themselves in large-scale industrial operations, and are capable of an 18 to 21 per cent yield (by weight) of crude oil, from shale in the freshly-excavated moist state.

From Esthonian shale oil, which is an asphaltic product, classifiable, as far as its properties are concerned, between coal tar and petroleum, are derived a great number of products, and this number is continually increasing. Among the uses for which the products find a market both at home and abroad may be mentioned particularly the coating and impregnating of railroad ties, telegraph poles and other items of wood; the laying and surfacing of streets and roads (the hundreds of kilometers of asphalted ways in Esthonia testify to the popularity and quality of products applied to this use); the preparation of roofing and insulating products; the firing of marine and locomotive boilers, forges, etc.; the operation of many kinds of explosion and internal-combustion engines. Many years of experience with gasolines distilled from shale oil have shown them to give excellent service in all types of automobile, and to possess high antiknock rating.

Since the beginning of 1932 all plants producing shale oil have been operating at full load and have found a ready market for their output. The exportation of shale oil and its derivatives in all the Baltic countries is steadily on the upgrade (these lands are without shale or petroleum resources). Moreover, a market has been won, particularly for the impregnation products, in Germany, Belgium and Bulgaria; shipments of asphalt are regularly made to Czechoslovakia and Holland. As far back as the middle of 1934 the number of oil plants in operation in Esthonia had proved inadequate to supply the whole of the demand for shale-oil products; since then the state establishment has greatly enlarged its facilities, and at least one of the private companies has erected new installations, bringing its annual production figure up to 70,000 tons.



Generalized section of the Esthonia shale beds

Oil-Well Behavior Based Upon Subsurface Pressure Data

By H. C. MILLER, E. S. BURNETT and R. V. HIGGINS
U. S. Bureau of Mines*

Information obtained from subsurface pressure and temperature measurements in oil wells now is recognized as invaluable to geologists, engineers and operators of oil properties.

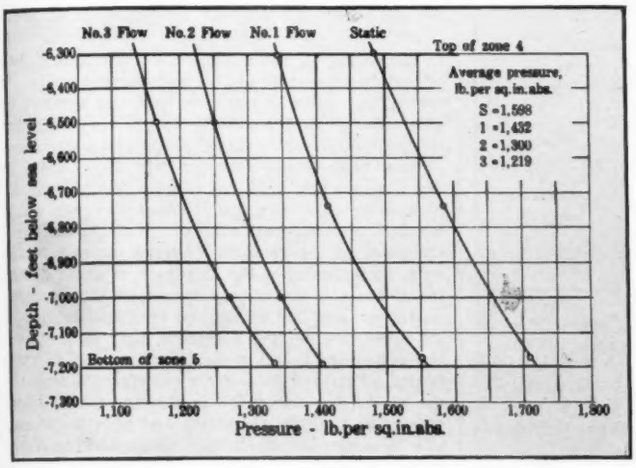


Fig. 1—Depth-pressure curves for static conditions and three rates of flow in a well in Kettleman Hills field, California

Available only during the past few years, data resulting from subsurface pressure surveys in oil wells already have found widespread application in the estimation of reserves and in the planning of comprehensive oil-field development programs. Subsurface pressure and temperature data, together with measurements of fluid volumes produced by individual wells and specific gravities of the fluids, also are included in the fundamental information essential in studying the movement of oil, gas and water through reservoir sands to wells. Heretofore, laboratory findings were relied upon almost entirely for information pertaining to the mechanics of flow of fluids through porous media, because there was no way to check laboratory results with actual performance in underground formations until subsurface pressure and temperature instruments were developed. Laboratory and field experiments now lend themselves to closer correlation—a fact that will accelerate the interpretation of many phenomena that occur when oil and gas flow through reservoir rocks, thousands of feet below the surface of the earth.

This article summarizes the results obtained thus far in a Bureau of Mines study of certain data pertaining to subsurface pressures and production of wells producing oil and gas (and water). For wells that have been studied, flowing naturally under volumetric or hydraulic control, a simple relation has been found between the mass rate of fluid (oil, gas and water) production and the corresponding drop in pressure in the reservoir sand. The equated relation embodies a productivity factor or "index" expressed in terms of mass rate of fluid production per pound drop in pressure through the sands. The equation as developed is an expression of the ability of a well to produce, which permits comparison on a uniform basis of the productivities of different wells. The study shows also that over the range of observed data, a productivity factor based on mass rate of production is a constant for a given well at different rates of flow. In other words, the mass rate of production is a straight-line function of the drop in pressure through the reservoir sand.

Substitution in the equation of actual pressure determinations and corresponding production data obtained while a well is flowing permits computing the average static pressure opposite the producing sand in a well. Thus, if two (but preferably three or more) sets of pressure-flow data are obtained from a well, the average pressure that would exist opposite the productive sand or zone, if the well were shut in, can be determined.

The study of subsurface pressure and temperature data is being made under the supervision of R. A. Cattell, chief engineer, Petroleum and Natural Gas Division, Bureau of Mines. The writers wish to thank R. E. Allen, former assistant oil umpire, Central Committee of California Oil Producers and now with A. O. Smith Corp.; William Reinhardt, general manager, Kettleman North Dome Association; A. C. Rubel, Union Oil Co. of California; A. H. Bell, Continental Oil Co. of California, and E. A. Wahlstrom, Stanolind Oil & Gas Co. for furnishing the well data upon which this study is based. Thanks are due also to the following engineers for their constructive criticism of the manuscript: H. N. Marsh and B. H. Robinson, General Petroleum Corp. of California; A. H. Bell, Continental Oil Co. of California, H. C. Pyle, Union Oil Co. of California, all with headquarters in Los Angeles, Calif.; to R. C. Patterson, U. S. Geological Survey, Taft, Calif.; and to the following members of the Bureau of Mines: R. A. Cattell, H. C. Fowler, C. W. Seibel, Gustav Wade, C. B. Carpenter and G. B. Shea.

In May and June, 1935, subsurface pressure and temperature traverses were run by representatives of the oil umpire for the Central Committee of California Oil Producers in a large number of wells in the Kettleman North Dome oil field, California. Through the courtesy of R. E. Allen, then assistant oil umpire, and the officials of several of the companies on whose wells the tests were made, reservoir and production data resulting from this pressure-temperature survey were made available to the Bureau of Mines for its study of flow of oil, gas and water through reservoir sands. Later, certain data acquired during subsequent surveys on the Kettleman North Dome Association holdings were made available to the writers. Data of a similar type to those on Kettleman Hills wells were collected also on wells in the Dominguez, Playa del Rey, and Padre Canyon fields, California; Hobbs field, New Mexico; Rodessa field, Louisiana, and the East Texas field.

***A. I. M. E.*—Before annual meeting, New York, Feb., 1937**

In the course of the study reported in this paper, data were collected from more than 150 wells. The observations on many of the wells, however, were found to be incomplete or unsuitable for the purpose of investigating the flow of fluids through reservoir sands because some essential information was lacking or obviously in error. For example, the data collected from wells reported to have been surging or heading badly during flow tests were eliminated from consideration because it was found that pressure and volume observa-

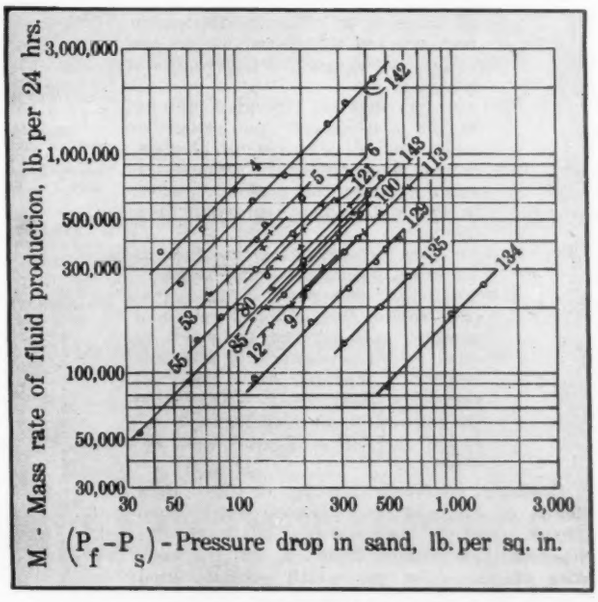


Fig. 2—Results of tests on 17 oil wells showing straight-line relation between M and ($P_f - P_s$). No. 129, well in Dominguez field, Calif.; 134 and 135, wells in Playa Del Rey field, Calif.; 142, well in Rodessa field, La.; 143, well in East Texas field, Texas; all others, wells in Kettleman Hills field, Calif.

*This paper was presented under the author's title, "A Bureau of Mines Study of Oil-Well Behavior Based Upon Subsurface Pressures and Production Data," and is published by permission of the director, U. S. Bureau of Mines. Mr. Miller is senior petroleum engineer, U. S. Bureau of Mines, at San Francisco, Calif.; Mr. Burnett is senior mechanical engineer, U. S. Bureau of Mines, at Amarillo, Tex., and Mr. Higgins, assistant petroleum chemist, U. S. Bureau of Mines, San Francisco, Calif.

tions were affected uncertainly by unsteady flow. Test data from wells tubed below the top of the producing sands also were set aside temporarily to eliminate from consideration pressure determinations that might be inaccurate because of restriction of the flow channel by the pressure instrument. This report, therefore, is based on the study of pressures, production and related data from 45 wells.

EQUATION FOR FLOW OF FLUIDS

The collected data concerning depths and pressures opposite the producing sands were plotted on depth-pressure charts, as shown on Figure 1. The best curve was drawn through each set of plotted points representing the pressure traverse for one condition of flow (zero flow for the traverse made while the well was shut in). The average pressures between the top and bottom of the producing sands were determined from the depth-pressure curves by means of a planimeter.

The drops in pressure between the average formation (static) pressure and the different average flowing pressures then were determined, and the differential pressures were plotted on logarithmic paper against the corresponding mass of fluid (oil, gas and water) production per 24 hours. In a large number of wells a definite relation between the pressure drop in the producing sands and the combined or total mass rates of (fluid) production was found to exist. This relation, as represented graphically on logarithmic paper, is a straight line having a 1 to 1 slope.

Figure 2 shows the graphs on logarithmic paper for 17 wells where the mass rate of production per 24 hours is plotted against the drop in pressure through the sands for different rates of flow. This relation was found to hold for many other flowing wells in several oil-producing districts of the United States, but for clarity their graphs are not shown on this chart. The relation between the mass rate of fluid production and the pressure drop in the sand, shown graphically in Figure 2, can be expressed mathematically by the linear equation:

$$\text{Log } M = \text{Log } C + \text{Log } (P_f - P_s),$$

or in arithmetic co-ordinates by:

$$M = C\,(P_f - P_s),$$

where

M = mass rate of fluid production, pounds per 24 hours. Also, $M = Q_o w_o + Q_g w_g + Q_w w_w$, where Q_o, Q_g and Q_w are the respective volume rates of production of oil, gas, and water in cubic feet per 24 hours at 60° F. and atmospheric pressure, and w_o, w_g and w_w are the corresponding densities in pounds per cubic foot.

P_f = average "shut in" formation pressure in the well opposite the productive sands, pounds per square inch absolute,

P_s = average back pressure (flowing pressure) opposite the productive sands in the well, pounds per square inch absolute,

$P_f - P_s$ = pressure drop producing flow through the sands, pounds per square inch,

C = coefficient, numerically equal to the mass rate of flow of fluids per pound pressure drop through the sand: in other words, a productivity factor or "index." C has the same numerical value as M when $P_f - P_s = 1$; or since the slope of the lines on Figure 2 is 1 to 1, C is 1/100 of M, read at $P_f - P_s = 100$.

Ordinary arithmetic plotting of the values plotted in Figure 2 would yield straight lines through the origin ($M = 0$, $P_f - P_s = 0$). The slopes of these straight lines (C) are the mass rates of production per pound pressure drop through the sand, or the productivity "indices."

It should be emphasized that the straight-line relation between the drop in pressure and the mass rate of flow of heterogeneous fluids through reservoir sands presented in this paper is merely an empirical statement of the facts found on plotting the data pertaining to the wells in several fields that have been studied. The relation may not be supported completely on a rational basis; it has rational support only for an incompressible fluid and viscous flow — conditions that probably were approached in the flow of undersaturated oil through reservoir sands in the East Texas field studied by Reistle and Hayes.[1] However, certain factors in

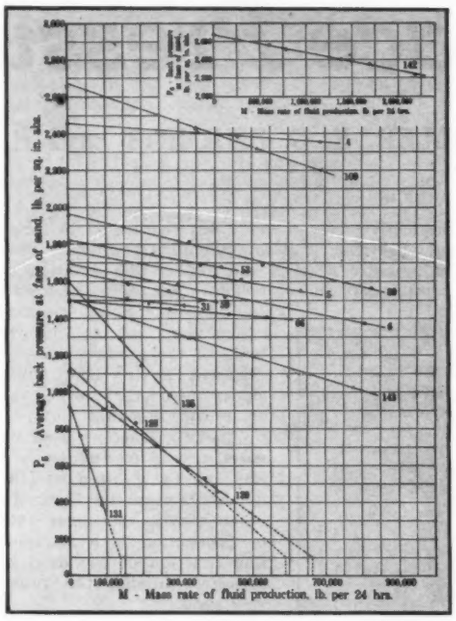


Fig. 3—Results of tests on 15 oil wells showing straight-line relation between P_s and M. Nos. 128, 129 and 131, wells in Dominguez field, Calif.; 135, well in Playa Del Rey field, Calif.; 142, well in Rodessa field, La.; 143, well in East Texas field, Texas; all others, wells in Kettleman Hills field, Calif.

the flow of compressible fluids through reservoir sands may have compensating influences that make the relation hold in a large number of wells. Perhaps, after additional data have been collected and analyzed more rigorously than has been possible in the preparation of this paper, some modification of the equation may be necessary. However, until instruments are built that will record subsurface pressures more accurately than is possible with those now in general use, it is believed that the relation as expressed can be considered a close approximation for flow of mixtures of oil and gas through many reservoir sands and that application of the empirically developed equation will be helpful in studying performance of wells and reservoirs.

C, in the equation, $M = C\,(P_f - P_s)$, numerically is equal to the mass rate of flow of all fluids entering the well per pound drop in pressure through the reservoir sand. As such, C is a measure of the ability of a sand to produce and therefore a productivity factor or "index." It is well known that oil sands generally are not uniformly permeable from top to bottom or even laterally over the area of the reservoir. For that reason, C cannot be considered an absolute measure of permeability. Many producing zones, especially in California, comprise a series of oil sands, sandy shales that may bear oil, and nonproductive shales. Furthermore, the shale strata interbedded between layers of productive sand range in thickness from a fraction of an inch to many feet and may or may not be continuous throughout the extent of the reservoir. Obviously in a system as complex as an oil reservoir, the characteristics of each sand layer or the effect on average permeability of shale lenses in the sands cannot be evaluated accurately.

As many oil sands consist of alternate layers of productive sand and nonproductive shales, it seems reasonable to conclude that any measure of permeability that would be helpful in comparing the productivity of wells drilled in productive zones of that type should consider only those strata in the sand section that are oil and gas bearing. To be able to make such comparisons, however, would require accurate knowledge of the cumulative thickness of the productive strata exposed to the well. Unfortunately, the thickness of shale breaks in oil zones is not always measured and recorded on the drillers' log sheets and electrical logging of oil zones has not yet become a part of the drilling procedure in all wells. Furthermore, in California, oil strings generally are perforated from the top to the bottom of the productive zones; blank pipe is set between the zones, and no attempt usually is made to "blank off" nonproductive strata within oil zones. Therefore the number of feet of perforated pipe in a well is not necessarily a measure of the net thickness of the productive sand exposed to the well. The only information available to the writers on wells included in their study is the number of feet of perforated pipe in the wells—in other words, the combined thickness of the several oil zones exposed in the wells. Accordingly, for comparative purposes, all calculations of the productivity of wells were made on the basis of their "specific productivity," C′ — pounds of fluids produced by the wells per 24 hours per foot of oil zone exposed in the well per pound difference between the average formation (static or shut-in) and flowing pressures. Such a comparison is based on the assumption that the entire thickness of each producing zone is uniformly productive, which, of course, is not true. However, until more

[1]Reistle, Jr., C. E. and Hayes, E. P., A study of subsurface pressures and temperatures in flowing wells in the East Texas field and the application of these data to reservoir and vertical-flow problems: Bureau of Mines, Report of Investigations 3211, May, 1933, 30 pp.

TABLE 2—GAS-OIL RATIOS, AND MEASURED AND COMPUTED VALUES OF THE AVERAGE FORMATION (STATIC) PRESSURE IN 19 OIL WELLS IN SEVERAL DIFFERENT FIELDS

Well example No.	Variation in gas-oil ratios, cu. ft. per bbl.	Pressures (Lb. per sq. in. abs.) Measured	Pressures (Lb. per sq. in. abs.) Calculated	Differences (Calculated minus measured) Lb. per sq. in.	Differences (Calculated minus measured) Per cent
Kettleman Hills, California					
4	561- 883	2,460	2,456	+ 6	+0.2
5	938- 1,010	1,747	1,767	+17	+1.0
6	1,348- 1,414	1,705	1,695	—10	—0.6
9	522- 697	1,815	1,813	— 2	—0.1
17	640- 685	1,714	1,718	+ 4	+0.2
31	751- 852	1,537	1,532	— 5	—0.3
53	807- 1,185	1,818	1,822	+ 4	+0.2
59	636- 813	1,655	1,653	— 2	—0.1
66	1,025- 1,135	1,479	1,500	+21	+1.4
76	656- 768	1,548	1,562	+14	+0.9
89	2,820- 3,010	1,960	1,964	+ 4	+0.2
100	2,348- 3,820	1,598	1,600	+ 2	+0.1
109	13,490-15,790	2,657	2,678	+21	+0.8
Dominguez, California					
128	1,138- 1,312	1,111	1,133	+22	+2.0
129	940- 1,350	1,030	1,048	+18	+1.7
Playa Del Rey, California					
134	27,600-41,700	1,618	1,596	—22	—1.4
135	4,300- 4,765	1,604	1,598	— 6	—0.4
Rodessa, Louisiana					
142	3,024- 5,973	2,670	2,664	— 6	—0.2
East Texas, Texas					
143	300	1,500	1,496	— 4	—0.3

detailed information on net thicknesses of producing zones is available, comparisons between wells on the basis of their specific productivities are believed to be more significant than those based on average productivities.

CONSTANCY OF WELL PRODUCTIVITY

Although insufficient field data have been collected to permit making any conclusive statements as to the constancy of, or variation in, the productivity of wells with time and with changes in production practices, a number of interesting inductions can be made. The following statements and those appearing in the next section on the productivity of offset wells, therefore, are observations rather than definite conclusions.

Table 1 shows values of C (productivity factor) and C′ (specific productivity factor) at different periods in the life of nine wells in the Kettleman Hills field. The small differences in the values for C and for C′ in wells No. 9, 12, 59, 85 and 96, and the fact that in most of the wells the productivity did not increase (or decrease) uniformly with time but changed irregularly, suggest that in some wells the productivity factor is relatively constant over periods as long as eight or nine months.

TABLE 1—CHANGES IN WELL PRODUCTIVITY WITH TIME

(Nine wells in the Kettleman Hills, Calif., field)

Well example No. and months during which tests were made		Productivity factor, C, lb. of fluid per 24 hours per lb. pressure drop in sand	Perforations exposed to sands in well, ft.	Specific productivity factor, C′, lb. of fluid per 24 hours per lb. pressure drop in sand per ft. of sand
9	May, 1935	1,130	441	2.6
	Dec., 1935	1,000	441	2.3
	Feb., 1936	1,065	441	2.4
12	May, 1935	1,185	450	2.6
	Dec., 1935	1,100	450	2.4
	Feb., 1936	1,335	450	3.0
13	May, 1935	5,810	874	6.6
	Jan., 1936	3,110	874	3.6
	Feb., 1936	2,435	874	2.8
	Mar., 1936	3,470	874	4.0
31	May, 1935	4,530	1,089	4.2
	Jan., 1936	5,080	1,089	4.7
	Feb., 1936	6,430	1,089	5.9
39	May, 1935	2,970	900	3.3
	Feb., 1936	1,685	900	1.9
	Apr., 1936	2,340	900	2.6
58	June, 1935	2,865	895	3.2
	Feb., 1936	4,240	895	4.7
	Apr., 1936	3,730	895	4 2
59	May, 1935	2,340	869	2.7
	Jan., 1936	2,060	869	2.4
85	May, 1935	1,625	880	1.8
	Jan., 1936	1,625	880	1.8
96	May, 1935	1,050	988	1.1
	Jan., 1936	1,295	988	1.3
	Mar., 1936	1,360	988	1.4

Changes in well productivity may result from a number of different causes. Decreasing productivity signifies that the mass flowing through the sands to the well per pound drop in pressure is decreasing with time and indicates possible clogging of the sand face by sand, silt, waxy substances, or other materials, or drainage interference by other wells. On the other hand, if the productivity factor of a well increases with time it may be evidence that the well is "cleaning itself out" and that the resistance to flow at the sand face is decreasing. If the well produces sand along with the oil and gas the increase in productivity per pound drop in pressure through the sand may indicate that channels have been created in the reservoir or that the effective radius of the well bore is increasing.

The relatively small increase (or decrease) in the productivity factor during an eight-month period indicates that the change in the ability of a sand to produce fluids per pound pressure drop must be gradual and of small magnitude during periods of a month or two. Therefore, if the productivity factor of a well remains constant, or nearly so, for one or a few months, after the factor for a well is once established, it may be used conveniently during the period in which it remains relatively constant to regulate production practices in accordance with desired rates of production or pressure drop through the sand.

PRODUCTIVITY OF OFFSET WELLS

The data studied in connection with this report contained field tests on a number of sets of adjoining wells producing from the same zones in the Kettleman Hills field. Wells 9 and 12 (Table 1) were approximately 1,800 feet apart; their spe-

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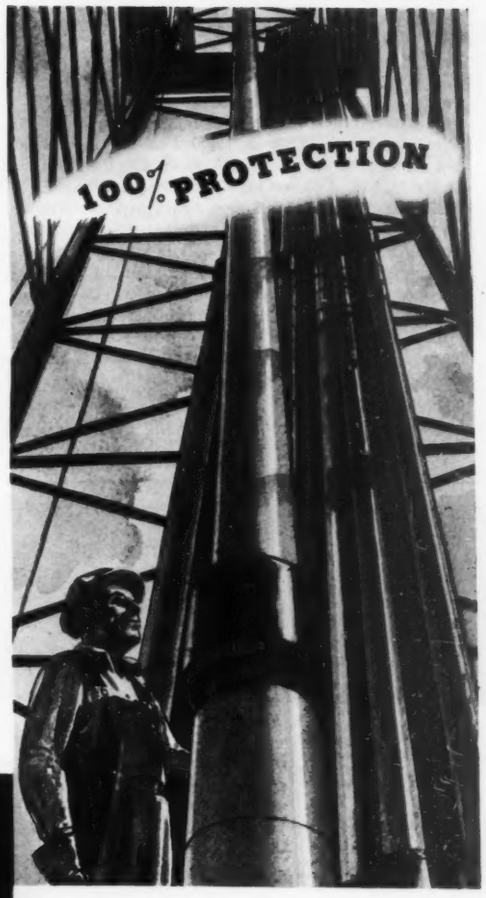

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cific productivity factors in May, 1935, were identical, varied by 0.1 (4 per cent) in December, 1935, and differed by 0.6 (25 per cent) in February, 1936. Well 58 (Table 1) was 1,300 feet from Well 59, yet in the summer of 1935 their specific productivity factors differed by 0.5, or 18½ per cent. Two other offset wells, 1,585 feet apart in the northern end of the north dome of Kettleman Hills and producing from the same zones, had specific productivity factors in May, 1935, of 2.6 and 2.4 a difference of 8 per cent; another set of wells spaced 1,425 feet apart had specific productivities of 4.6 and 4.2—a difference of 9 per cent—indicating a certain degree of uniformity of permeability of the sands about the two pairs of wells. That the specific productivities of all pairs of wells are not necessarily in close agreement is shown by the fact that in two wells, 2,000 feet apart, the productivity factor for one was 11.8 and for the other, 8.5—a difference of 40 per cent. These high specific productivity factors indicate relatively open or permeable sands, and it is to be expected that a considerable difference in productivity of adjacent wells will exist in such sands.

Although data for some pairs of wells in the Kettleman Hills field show relatively wide variations in their indicated specific productivity factors, similar data pertaining to another part of the field indicate that the permeability of the productive sands, extending over quite wide limits, is more uniform than engineers heretofore have had reason to expect. For example in an area one-quarter mile wide and 1¼ miles long, six wells had specific productivity factors of 3.2, 3.8, 3.2, 4.2, 4.6, and 4.2, respectively.

To determine the average formation (shut-in) pressure in a well, engineers have found it necessary to shut in the well for 24 hours or longer to allow pressures in the well opposite the sand face and in the formation about the well to equalize before lowering a pressure instrument and making a pressure traverse. At best one or more day's production is lost on the following schedule while waiting for pressures to equalize, and frequently wells fail to "come back" and produce oil at their former rate after having been shut in for even so short a period as 24 hours. An example may be cited also where an operator greatly desired to know the pressure opposite the productive sand in a well but feared to close the surface valves to permit equalization of well and reservoir pressures because of the high pressure that would have developed in the well if it were closed in. For these and perhaps other reasons, many operators are anxious to find some method whereby static pressures in wells can be determined without closing the wells.

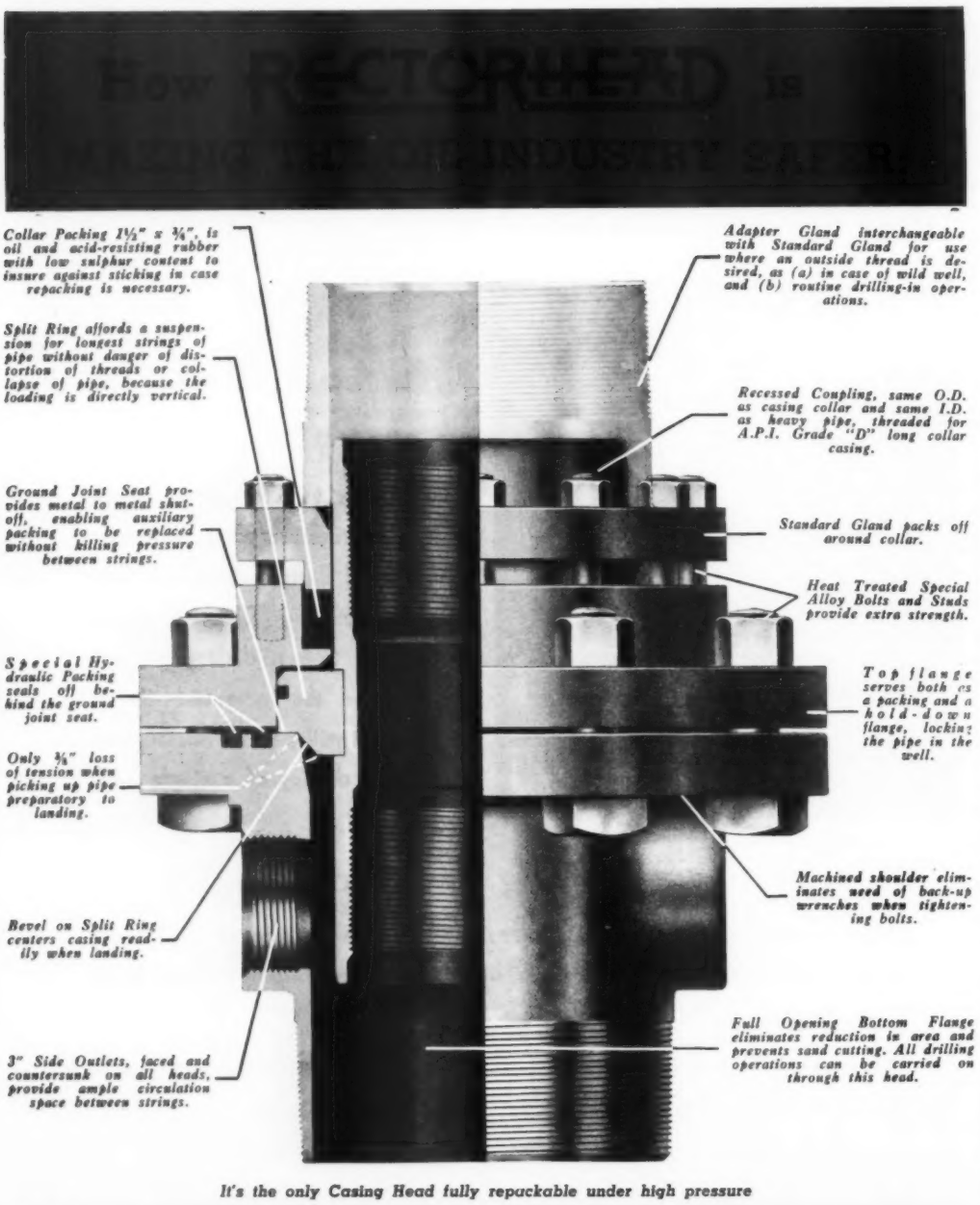
If the pressure drop in the sand is proportional to the mass rate of production, in accordance with the relation $M = C(P_f - P_s)$, conforming to the indicated graphical study previously discussed, it is possible to estimate P_f, the most probable average formation (shut-in) pressure—corresponding to zero production—and $\frac{M}{P_f - P_s}$ or C, the most probable average mass rate of production of a well per pound drop in pressure through the sand, from flowing data alone. Furthermore, if subsequent studies show that the relation between pressure drop and mass rate of fluid production holds for flow conditions beyond the range of experimental data studied so far, it will be possible to estimate the maximum fluid production rate (well potential) at any limiting pressure at the sand face within the capacity of production equipment without making open-flow tests.

When no measurements of the static or shut-in pressure opposite the productive sands have been made and two or more sets of pressure and production data have been obtained from a well, a close estimate of the average static pressure across the sand face exposed in the well can be made by plotting on rectangular coordinate paper average pressures at the sand face while the well is flowing against the corresponding mass rates of flow. The best straight line through the plotted points extended to the abscissa representing zero flow gives the average static pressure. Extending the best straight line in the opposite direction to any limiting sand-face pressure shows the maximum fluid production rate of the well at that pressure.

Average pressures at the sand face are plotted against the mass rate of flow for 15 wells in Figure 3. Best straight lines are drawn through the plotted points and extended to the left to intersect the abscissa representing zero flow where the average static pressure across the sand face in the well may be read. For three of the wells, the best lines through the plotted points have been extended (by dashed lines) to the ordinate representing a limiting pressure of 100 pounds per square inch absolute. This was done to estimate the potential production rate of the wells, in pounds of fluid per 24 hours, at that limiting average back pressure against the producing sands.

Static pressure surveys had been made in each of the 15 wells represented in Figure 3. However, the static pressure reading was disregarded when the position of the best straight line through the points representing flowing data was determined. The difference in average static pressure between that determined from actual measurements and that determined by the best straight line through the points representing flowing data may be noted by the disparity between the plotted static pressure reading and the point of intersection of the best straight line with the zero ordinate. For some of the wells, the difference is so small that it can not be shown on the scale used in drawing Fig. 3.

The slopes of the lines referred to the P_s axis are, in numerical values, directly proportional to the productivity indices of the wells. The fact that the slopes of the lines representing different wells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are not the same indicates that the average productivities of the wells differ.

Table 2 shows the average formation (static) pressure actually measured in 19 wells in several different fields and the average formation pressure calculated by the method of least squares[2] from data taken while the wells were flowing. The table also shows the difference, in pounds per square inch, between the computed and measured formation pressures and these differences expressed as a percentage of the measured pressure.

SUMMARY

The study of the observed data on subsurface pressures opposite the productive sands and related production data on wells in the Kettleman Hills, Dominguez, Playa Del Rey, and Padre Canyon fields, California; Hobbs field, New Mexico; Rodessa field, Louisiana; and East Texas field, Texas, shows a simple definite relation between the mass rate of fluid (oil, gas, and water) production and the drop in pressure causing flow through the sands. When the mass rates of production for different rates of flow in a well are plotted on logarithmic paper against the difference between the average formation (static or shut-in) and flowing pressures opposite the producing sands, the relationship between them is represented by a straight line, which may be expressed mathematically by the equation:

$$M = C\ (P_r - P_s),$$

where

M = mass rate of fluid (oil, gas, and water) production, pound per 24 hours.

C = coefficient, numerically equal to the mass rate of flow of fluids per pound pressure drop through the sands,

P_r = average "shut-in" formation pressure opposite the producing sands, pound per square inch absolute,

P_s = average back pressure (flowing pressure) in the well opposite the producing sands, pound per square inch absolute.

Substitution of observed well data for the terms M, P_r and P_s in the equation permits calculating values for C, the productivity factor or index for the well, or both P_r and C may be determined by substituting numerical values of M and P_s at two or more rates of flow. The study indicates, for the range of production observed in the tests forming the basis of this report, that C is a constant in a given well for all rates of flow. In a number of wells, C did not change (within the limits of accuracy of the reported data) during an eight-month period while the wells were producing regularly or alternately flowed and shut in for periods of time. In a number of other wells C did not remain constant during an eight-month period. In those wells where C increased, the probable indication is that the wells were "cleaning themselves out" or that a readjustment of the sand particles immediately about the wells was reducing the resistance to flow of fluids into the well bores. When C decreased with time, or in other words, when less mass of fluids entered the wells per pound drop in pressure through the sand, a condition of clogging at the sand face, or plugging of the perforations in the oil string, is suggested.

A study of several pairs of wells and one group of six wells producing from the same sands in the Kettleman Hills field showed that the "specific productivity" of reservoir sands, as indicated by the pounds of fluids flowing to the wells through 1 foot of sand thickness per 24 hours per pound drop in pressure, may be fairly uniform over extended areas. However, observations on other sets of flowing wells in the Kettleman Hills field showed that this condition does not always hold and that neighboring wells producing from the same sands may differ considerably in "specific productivity."

Application of relations that may be found between rates of fluid production and differential

[2]For an excellent discussion of the method of least squares see "Higher Mathematics for Students of Chemistry and Physics" by J. W. Mellor, published by Longmans, Green & Co., New York, 1931.

pressures in producing sands will aid in developing a better understanding of reservoir performance and the related problem of well spacing. Since the straight-line relation discussed in this paper is merely an empirical statement of the facts found on analyzing limited field data and may not be supported completely on a rational basis, Bureau of Mines engineers invite contributions of oil-well production data and subsurface pressure and temperature traverses to be used in continuing their check and further analysis of what appears to be a useful relation.

Interesting Meetings Planned by W.P.R.A. Division

Programs have been completed for the next three monthly meetings of the technical group of the Ark-La-Tex Division of Western Petroleum Refiners Association, according to announcement from the divisional office in Shreveport. These programs have been arranged with a view to presenting subjects that would appeal to and be of interest and benefit to refiners throughout the tri-state area, and are diversified as to subject matter presented.

The March meeting of the technical group will be held in Shreveport on Friday, March 12, at which time a paper entitled "Paints for the Oil Industry—Their History, Development and Use" will be presented by W. T. Deacon, vice president, St. Louis Surfacer and Paint Co., St. Louis, Mo. For this meeting, in addition to the technical men who regularly attend these meetings, a special invitation will be extended to production and pipe line department superintendents, as it is felt the information contained in Mr. Deacon's paper will be of much benefit to them also.

The April technical meeting is scheduled for Friday, April 9, and will be held at the Garrett Hotel, in El Dorado, Ark. At this meeting R. M. Heine, chief chemist, L. R. MacKenzie, Inc., Des Moines, Iowa, will deliver a paper on asphaltic emulsions.

The divisional technical meetings are held the second Friday of each month, and it has long been a feature of these meetings that an open forum discussion follows the reading of all papers.

Auto Accessory Book Published

"Chexall Accessory Blue Book," the first book of its kind ever released, has been published by the Check-Chart Corp. The book contains complete specifications of all accessories recommended by the car manufacturers' engineers for use in each of their cars. The installation of replacement accessories that conform with the detailed dimensions given in the volume will result in greater car owner satisfaction since it will preserve the same standard of performance built into the car at the factory.

One section is devoted to specifications, conveniently arranged and accurate and complete in detail. A colored divider sheet separates each make of car to facilitate ready reference. In each of these sections is listed the specifications for windshield wiper parts, batteries, fan belts, cables, caps, oil filters, fuses, hoses, lamp bulbs, spark plugs, tires and tubes.

Valuable suggestions for accessory display and merchandising, a business booster page, an anti-freeze proportion table and complete instructions for installing essential accessories are added features of the book.

Lubricants Conference at London

The American Petroleum Institute has received from General Magnus Howat, secretary of the Institution of Mechanical Engineers, an invitation to participate in a general discussion of lubrication and lubricants in London, England, in October. Some 100 authorities have been asked to present papers to provide a comprehensive review of current knowledge regarding the fundamental characteristics of lubrication.

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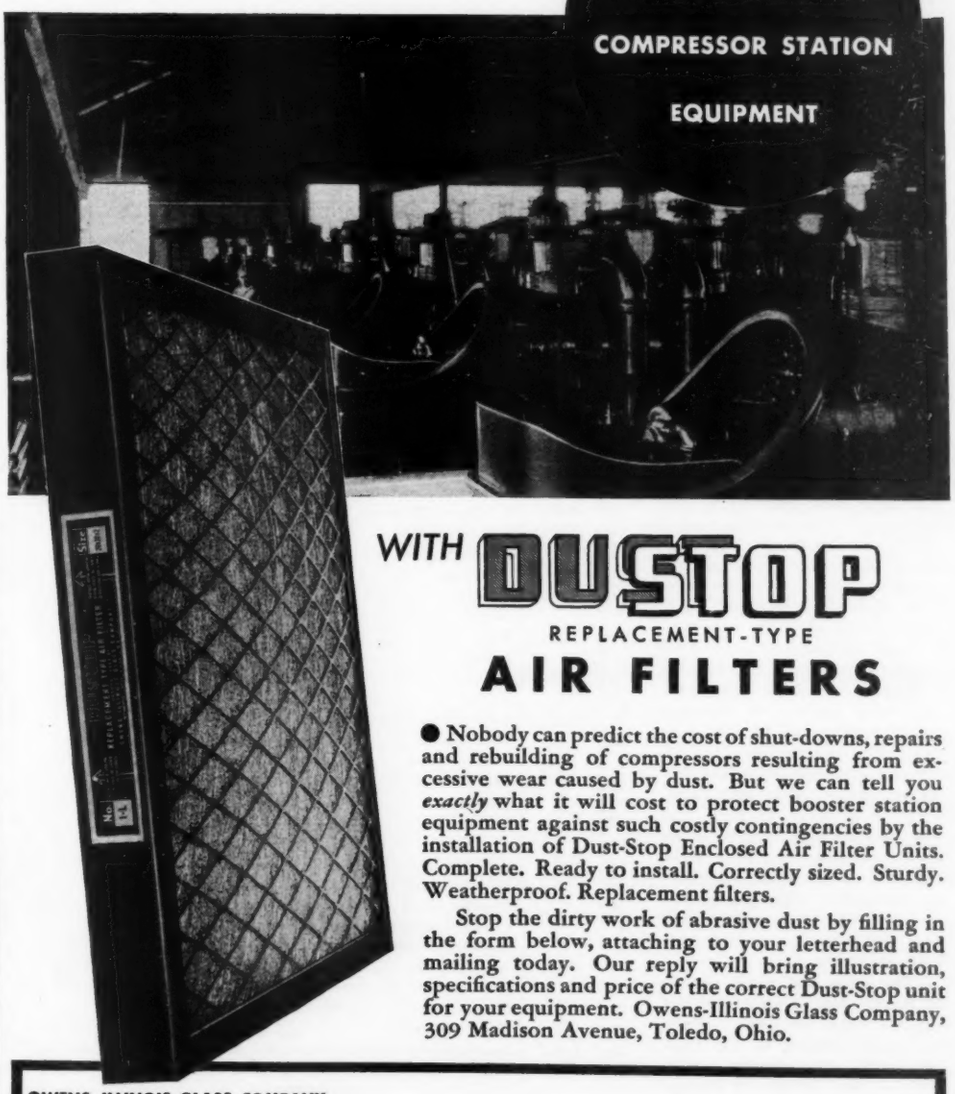

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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Rendering Cement Tanks Tight for Gasoline Storage

Do you have information covering the process for treating the surface of cement or concrete tanks for gasoline storage to make them tight and prevent leakage?—S. C.

Several schemes are in use for preparing cement mixtures to be used in the construction of tanks for storage of gasoline. The most important features, however, are the cement and workmanship. A tight tank cannot be made with a poor grade of cement or faulty mixture, that is, either a low percentage of cement or when the ingredients have not been thoroughly and uniformly mixed. The work requires a rich mixture. The workmanship must be of the very best and the pouring of the mixture should be continuous, with constant puddling, until completed. Both interior and exteriors should have a coat of neat cement followed at once with a cement mixture containing the treating material.

Several powdered substances are used for assisting in making cement-built tanks impervious to both water and petroleum liquids. These may be added to the neat cement mixture applied as quickly as possible after the removal of the forms. A fine clay, such as a good grade of dry fuller's earth may be mixed with the dry cement in the proportion of 3 to 10 per cent. Sodium silicate has been used, both as a part of the cement mixture and a final coat. Hydrated lime may be added to the dry cement alone or combined in the mixture with alum and lime soap, both powdered.

The Sylvester process, long used for waterproofing cement coated and concrete reservoirs has been applied to concrete tanks constructed for oil storage. The process requires alternate applications to the finished surface, first and third, etc., of a soap solution and then second and fourth of an alum solution. The soap solution contains three-fourths pound castile soap per gallon of water. The alum solution has 1 pound alum to each 8 gallons of water.

The soap and alum should be in complete solution and the surface must be clean. Have the soap solution at the boiling point and quickly apply with a flat brush. It is important to prevent any froth from reaching the cement, for the bubbles will break and leave an untreated surface exposed. Allow the first coat to remain on 24 hours or until it is dry and hard. The atmospheric temperature at the time of the application should not be below 50° F.

When the soap coating is dry, the alum solution, temperature between 60° and 70°, should be brushed on thoroughly over the first coat and let remain for 24 hours. Next apply the hot soap solution and let it stand for 24 hours before giving the second coat of the alum solution. Repeat these applications with at least two coats of each solution.

Chemical Compounds Present in Petroleum

This table is reproduced in response to numerous inquiries for information about the nature of the chemical compounds that may be present in petroleum. The list of the publications related to the research responsible for the data may be obtained from the National Bureau of Standards, Dr. Frederick D. Rossini, Washington, D. C.—Editor.

HYDROCARBONS IN MID-CONTINENT PETROLEUM, AS DETERMINED BY THE AMERICAN PETROLEUM INSTITUTE RESEARCH PROJECT 6 AT THE NATIONAL BUREAU OF STANDARDS (TO DECEMBER 31, 1936)

No.	Formula	Name and type of hydrocarbon	Boiling point at 1 atm.	Amount in crude	Purity of best sample	Described in Research Paper No. [a]
		PARAFFINIC	°C	%	*Mole %*	
1	CH_4	Methane	−161.7	[b]	[b]	
2	C_2H_6	Ethane	−88.6	[b]	[b]	
3	C_3H_8	Propane	−42.2	[b]	[b]	
4	C_4H_{10}	Isobutane	−12.1	[b]	[b]	
5	"	*n*-Butane	−0.5	[b]	[b]	
6	C_5H_{12}	2-Methylbutane	27.9	[b]	[b]	
7	"	*n*-Pentane	36.1	[b]	[b]	
8	C_6H_{14}	2, 3-Dimethylbutane	58.0	0.04	>95.	239, 311
9	"	2-Methylpentane	60.3	.09	>95.	239, 311
10	"	3-Methylpentane	63.3	.18	>95.	239, 311
11	"	*n*-Hexane	68.7	.5	98.3	239, 311
12	C_7H_{15}	2, 2-Dimethylpentane	78.9	.03	54.	458
13	"	2-Methylhexane	90.0	.25	99.9	542
14	"	3-Methylhexane	91.8	[c]	[c]	[d]
15	"	*n*-Heptane	98.4	.9	>99.8	432
16	C_8H_{18}	2-Methylheptane	117.2	.5	97.	552
17	"	*n*-Octane	125.6	1.0	99.1	282
18	C_9H_{20}	Isononane (2, 6-dimethylheptane?)	135.2	0.1	>97.	955
19	"	Isononane	140.9	[c]	[c]	[d]
20	"	2-Methyloctane	143.4	[c]	[c]	[d]
21	"	Isononane (3-methyloctane?)	144.5	[c]	[c]	[d]
22	"	*n*-Nonane	150.7	1.0	99.9	383
23	$C_{10}H_{22}$	*n*-Decane	174.0	0.8	>99.99	438
		NAPHTHENIC				
24	C_5H_{10}	Cyclopentane	49.5	[b]	[b]	
25	C_6H_{12}	Methylcyclopentane	71.9	0.2	98.7	375
26	"	Cyclohexane	80.8	.3	99.96	360
27	C_7H_{14}	1, 1-Dimethylcyclopentane	87.5	.04	95.	542
28	"	Methylcyclohexane	100.8	.3	>99.8	432
29	C_8H_{16}	Octanaphthene	119.8	.2	[b]	943
30	"	1, 3-Dimethylcyclohexane	120.3		98.	808, 943
31	"	Octanaphthene (1, 2-dimethylcyclohexane?)	123.4	.04	91.	943
32	"	Ethylcyclohexane	131.8	.1	95.	817
33	C_9H_{18}	Nonanaphthene (alkyl cyclopentane)	136.7	.1	>99.	745
34	"	Nonanaphthene (alkyl cyclopentane?)	141.3	[c]	[c]	[d]
		AROMATIC				
35	C_6H_6	Benzene	80.2	0.08	99.8	311
36	C_7H_8	Toluene	110.6	.3	[b]	280
37	C_8H_{10}	Ethylbenzene	136.2	.03	95.	554
38	"	*p*-Xylene	138.4	.04	>99.9	501
39	"	*m*-Xylene	139.2	.12	>99.9	501
40	"	*o*-Xylene	144.4	.12	>99.	501
41	C_9H_{12}	Isopropylbenzene	153.4	.03	>99.	[d]
42	"	1, 3, 5-Trimethylbenzene (mesitylene)	164.6	.02	99.95	614
43	"	1, 2, 4-Trimethylbenzene (pseudocumene)	169.2	.2	99.9	614
44	"	1, 2, 3-Trimethylbenzene (hemimellitene)	176.1	.06	99.95	614

[a] See list of publications. [b] Not determined. [c] Determination not yet completed. [d] Not yet published.

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Testing Method for Determining the Saponification Number of Oil, Etc.

We would like to know if you could supply us with information concerning the procedure for the determination of the saponification number of oils and greases. —H. B.

The A.S.T.M. has issued a test method for saponification, from which this outline has been prepared:

Apparatus

Saponification shall be made in a flask filled to a properly connected condenser. Heat preferably on an electric hot-plate.

Solutions

Alcoholic potash for saponification: KOH 58 gm. in 500 ml. purified 95% C_2H_5OH. Use clear portion.

Alcohol—Purify 95% C_2H_5OH with $AgNO_3$.

Standard HCl—One-half normal.

Phenolphthalen—One gram in 100 ml. C_2H_5OH and H_2O.

Make test with all chemicals in same portion as test in duplicate as blank test.

Procedure

Test sample—Fats or fatty oils use 2 to 3 gm. Oils containing over 30 per cent fatty oils use 5 gm.; oils containing less than 30 per cent use 10 gm.

Procedure—Weigh oil by difference into saponification flask, add 25 ml. alcoholic potash and 25 ml. neutral alcohol, connect to condenser and boil 3 hours. Titrate with HCl while hot.

Calculate the saponification number from the difference between the number of milliliters of half N. HCl required for the determination and the mean of the two blanks from:

$$\text{Saponification No.} = \frac{\text{Dif. ml.} \times 28.05}{\text{wt. of oil, gms.}}$$

The percentage of fatty oil (or fat) in a compounded product may be calculated from the saponification number of such a product only when the saponification number of the fatty oil is known. When the numbers of both oil and compounded oil are known, this formula shall be used.

$$\text{Fatty oil \%} = \frac{100 \times \text{Sap. No. Comp. oil}}{\text{Sap. No. fatty oil}}$$

The following values may be used:

Fatty Oil—	Saponification No.
Lard oil	192-198
Tallow	193-198
Neatsfoot	193-204
Fish	140-193
Sperm	120-140
Castor	176-187
Rapeseed	170-179
Soya bean	189-197
Peanut	186-197
Cottonseed	191-197
Blown rapeseed	195-216
Blown cottonseed	210-225
Degras	110-210

Reference: A.S.T.M. Standards on Petroleum Products, 1936, p. 272.

Use S & J Flame Arresters on High or Low Pressure Storage

The S. & J. Flame Arrester shown at the right, serves a highly important function in protecting the interconnected tankage of a vapor recovery system.

Although sufficiently important in the fire protection of individual storage tanks to justify their generous use, they are almost imperative in affording adequate fire protection to all tanks connected to an individual regulating valve in a vapor recovery system.

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The S. & J. Flame Arrester shown in combination with the S. & J. Still Type Breather Valve, for high pressure applications.

The S. & J. Flame Arrester shown in combination with the S. & J. All Weather Poppet Type Breather Valves for low pressure storage.

The illustrations at the left show the correct methods of applying the S. & J. Flame Arrester to either high pressure or conventional storage tanks.

When used on spherical or spheroidal high pressure tanks the S. & J. Still Type Breather Valve is an indispensable unit of a complete installation. It is one of a complete line of S. & J. fittings for spherical and spheroidal tanks.

When the S. & J. Flame Arrester is applied to the conventional low pressure storage tanks, the S. & J. All-Weather poppet type breather valve should be used to maintain the desired pressure.

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PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Setting Water String

In setting a water string it seems to be a not uncommon practice to set it several feet below the top of the oil sand. It would seem to me that this would result in more or less serious loss of production. Can you tell me what is the engineering opinion on this point?—T. G. R.

Modern practice in completing wells usually contemplates the taking of an electric well log. With such a log it is possible to determine very closely the location of gas, oil and water sands. With this information at hand it is not difficult to determine casing point.

One method of shutting off water is to run the string of casing to the bottom of the hole. With the electric log available the depth of each formation is indicated as well as thickness. Having this information it is possible to gun perforate the pipe below the water sand and then force cement behind the casing through the holes made by the gun perforator. This makes an excellent job and gives good control.

Additional History of Gas-Lift

I have read with interest the article on "History of Gas-Lift," in the January 21, 1937, issue of The Oil and Gas Journal, in which it is stated that "the first application of the air-lift in America is said to have been made in some oil wells in Pennsylvania by Cockford about the year 1864" and that "an early mention of the use of the air-lift in connection with the lifting of oil from wells is found in a book published in 1866, in which claims for an air-lift invention were made that would lift oil from the wells, thus doing away with the pump."

In this connection I have in my possession a volume entitled "The Oil Regions of Pennsylvania," published by Harper & Brothers in 1865. The author is one William Wright, a correspondent of the New York Times, who, after a cursory visit to the oil regions of western Pennsylvania, stated that he intended to visit every producing well in "Petrolia." This visit was made during the period from March to May, 1865, and the volume in question is a write-up of his experiences. Mr. Wright, in his chapter on the obstacles encountered in producing oil, states as follows:

"In the chapter on statistics will be found occasional references to the blower, a simple apparatus, first introduced into the Sherman well, and since then tried in several others with various success. The Sherman had flowed very largely for a time, but given out; resort was then had to the pump, which also at length proved insufficient. Finally, the manager introduced the instrument mentioned with quite satisfactory results, the yield coming up to between 40 and 60 bbls. a day. The blower consists simply of an iron tube, 1 inch in diameter, which is let down into the well outside of the fixed tube, the lower end of the blower being bent round, so as to pass upward into the orifice of the other. A column of air is then forced down the small pipe, from which it passes into the larger, and assists the natural action of the gas in forcing up the petroleum. By virtue of this simple contrivance to cooperate with nature, that well has gone forward for some months without any material diminution that I could learn. In other cases, however, the result was far from being equally satisfactory. The manager of the Noble and Delamater well tried the blower, under which the total yield amounted to 25 bbls., when the oil ceased to flow. In others, again, after using the blower without success, it has been taken out, and replaced by the pump, with a decided improvement in the yield. It deserves mention that these instruments are not all similar in design; and that some are regarded worthless under all circumstances. Before purchasing, it would be well to obtain a guarantee of satisfactory results, provided it can be proved that oil exists in the well to be subjected to the experiment. On this matter, as of every other, the experience of both practical and disinterested men is highly desirable."

In the chapter on statistics referred to in the above quotation Mr. Wright also makes the following statements with respect to the Noble and Delamater well:

" . . . . About the middle of last winter ceased to flow, when a blower was put in. The trial resulted in a total yield of about 25 bbls."

With respect to the Sherman well:

" . . . . finally stopped altogether last fall. Tried the pump for a time; but again became unproductive. Next, the proprietor put in a blower, which brought up an average yield of 50 bbls. per day, sometimes 60 bbls."

Shutting Off Cave in Open Hole

We have a problem on our hands and would appreciate it very much if you could offer any suggestions. We have started repressuring operations in wells that run about 850 feet in depth. There is about 75 feet of open hole between the oil sand and the point where the 6⅝-inch casing is seated. Our difficulty arises from shale which keeps caving in this open hole. This caving shale covers the oil sand in several of the wells and the working barrels become fouled. So many cleanout jobs have to be done that there is almost no profit in operating the wells.—R. N. M.

To make repair it is suggested the casing be carefully tested to determine whether there are any leaks. If water is running down behind the casing and causing the shale to cave it is probable the best way to make repair is to run another string of casing to the bottom of the hole and then gun perforate this string above the oil sand and apply cement back of the casing by squeeze methods. After this cement is set the casing could be gun perforated opposite the sand and put on production.

Another way to make repair is to run a liner inside the 6⅝-inch casing. First fill the bottom of the hole with sand and then cover with clay so that the whole section of oil sand is protected. Then run in cement in dump bailer to fill the hole above the plug and within two hours run in the liner with a plug in the bottom so cement cannot enter the liner.

To fill the annular space between 5-inch liner and 6⅝-inch hole will require 4.23 sacks of cement per 100 feet of hole. As you have about 75 feet of open hole, and is it is probable the hole below the 6⅝-inch casing is less than 6-inch diameter, you could probably get a good job if you use about 4 sacks of cement.

In running the liner it is suggested a left-hand thread be cut on the top of the liner and a swedge be used with corresponding thread for the 5-inch and regular hand thread for the tubing. This will permit the liner to be placed, or forced through the cement so that the annular space is filled. After the cement has been permitted to set, the swedge can be unscrewed and the tubing pulled. The next step is to drill out the wooden plug in the bottom of the liner and clean out the hole.

Mechanical Means of Producing Small Wells

We have a group of 20 wells in North Texas, 1,800 feet in depth, making about 5 bbls. each per day. Could we use some form of intermittent gas-lift flow to lift this production? What method of lifting would you advise?—C. D. W.

In as much as you have a definite knowledge as to the production that your wells will make, we assume you have already equipped the wells with some form of mechanical lifting device. If an individual beam pump has been installed, it is likely the cost per barrel is rather high. On the other hand, if you have installed a central power, as we suspect has been the case, it is not likely you would find it advisable to change to any other system of lifting, because of the capital cost involved for doing so.

Intermittent flow has been employed in Pennsylvania for many years for very small wells, that is, on the order of a barrel or two per day, in wells that would fill up for 12 to 24 hours without seriously impeding the flow into the well. At certain intervals, the accumulated oil is blown out of the wells by turning the discharge of a compressor, first into one well for a short period, then into the next well, and this procedure continued until all of the wells are cleaned of the accumulated oil.

In sand bodies which are not permeable to a high degree, and especially where there is a shothole of sufficient capacity to contain the accumulation of the flow of oil for a day or two, this method is quite inexpensive. A compressor of only small size is required, that is, from 25 to 50 horsepower.

Intermittent devices of automatic design can be employed for handling small wells, but the installation cost is usually too great to be warranted for such production as 5 bbls. per day, unless they have been introduced when the well was capable of making several times as much oil as your wells are now capable of producing.

Under certain conditions of reservoir pressure, the plunger-lift would operate to advantage, but the cost of installing same would be too great for wells that have already declined to 5 bbls. per day.

Oil and Gas Proration Laws

It is desired that information published with reference to oil and gas proration laws as applied in the several oil states be made available for study in preparing a series of lectures for one of the larger law schools. Can you assist by giving me references to such articles that have appeared in The Oil and Gas Journal?—C. W. S.

We are pleased to be able to refer you to the article by Mitchell Tucker, correspondent for The Oil and Gas Journal, located at Shreveport, La., in the issue of February 18, entitled "Proper Gas-Oil Ratio Factor in Allocating of Production," on page 27. This article was prepared because of the general interest in gas-oil ratios as applied to production orders recently issued covering Rodessa, La., oil field. It gives a resume of the present practice in several of the oil-producing states. If a complete check of all laws pertaining to production of oil and gas is desired, it is suggested you address Art L. Walker, secretary, Interstate Oil Compact Commission, State Capitol Building, Oklahoma City, Okla., for a copy of the compilation of such laws prepared for this body by a committee headed by Marvin Lee of Wichita, Kans.

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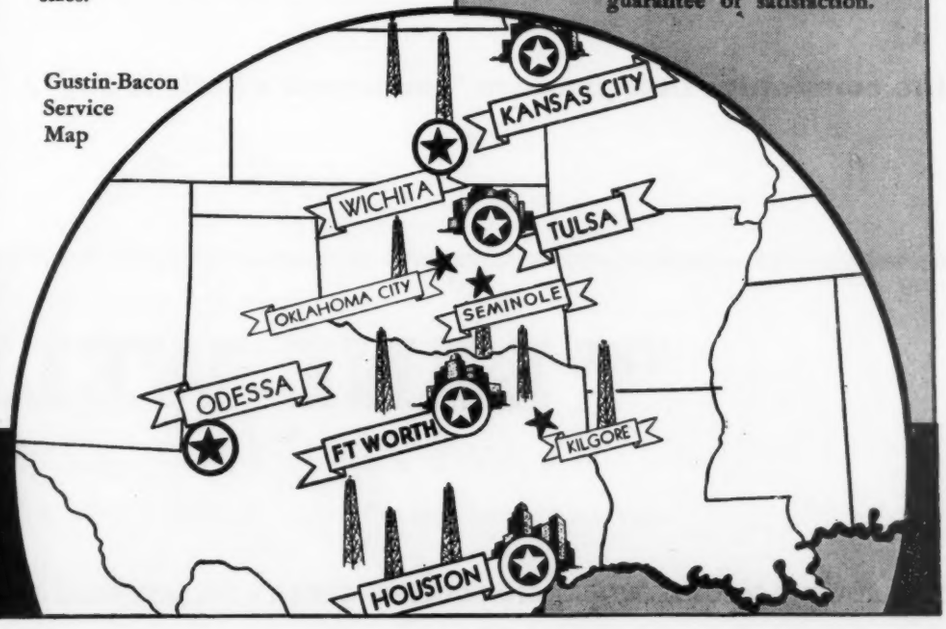

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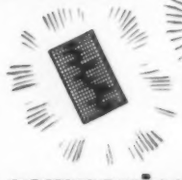
FIVE YEARS AGO, Bill Lane, Walt Wells and one employee **began operations in a small shop** **selling packers and experimenting with perforating equipment. Today, Lane-Wells Co. personnel numbers 157,** **housed in one of the most modern of oil field equipment plants on a five acre site** **operates a fleet of 19 field service trucks** **and has successfully perforated nearly 7,000** **oil wells. Lane-Wells products are used internationally.** **There must be a reason.** **Perhaps it's because Lane-Wells Gun Perforators** **Packers and Liner Hangers** **and Stratigraph Service**  **get results! Contact the nearest office for further** **details on the companies that produce "tomorrow's tools today".**

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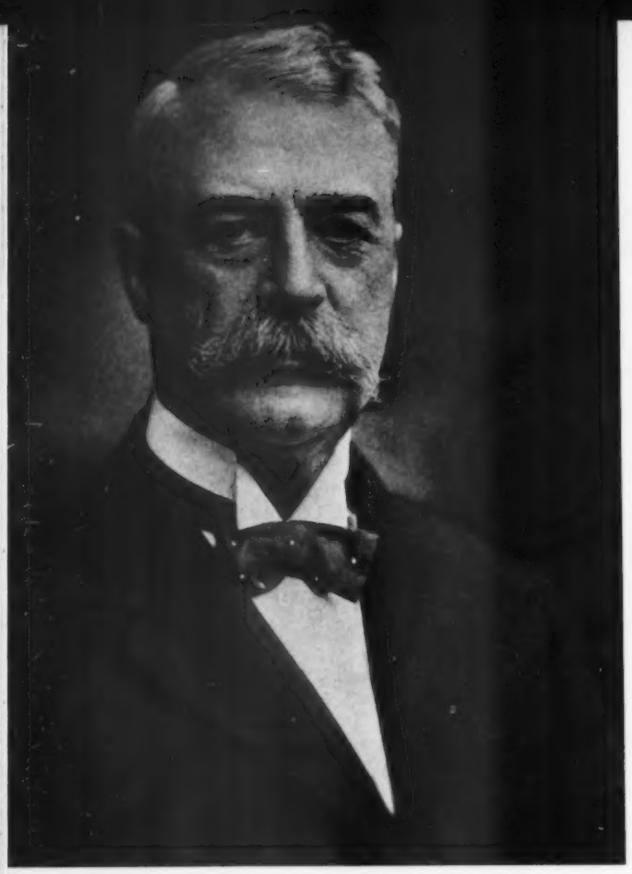
THE LANE-WELLS CO. OF TEXAS—HOUSTON & CORPUS CHRISTI • THE LANE-WELLS CO. OF OKLAHOMA—OKLAHOMA CITY & TULSA

75 YEARS OF PROGRESS

DEPARTMENT OF GEOGRAPHY
THE UNIVERSITY OF NEBRASKA

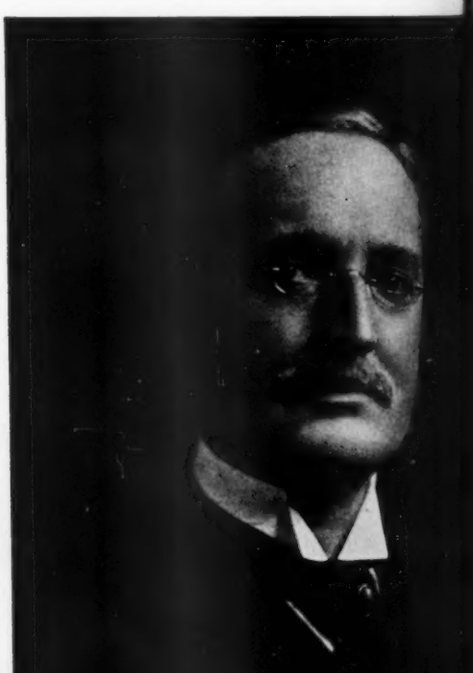


John Eaton

OIL WELL SUPPLY COMPANY AND THE NAME OF ITS FOUNDER, JOHN EATON, ARE INSEPARABLE. IT WAS MR. EATON'S FAR-SIGHTEDNESS, ENERGY, SQUARE DEALING, GRIT, HIS GENIUS FOR SENSING SITUATIONS AND APPRAISING MEN, THAT MADE THE GREAT SUPPLY ORGANIZATION POSSIBLE. DIRECTING ITS MINUTEST DEALINGS IN ITS FORMATIVE PERIOD, HE INVESTED IT WITH HIS OWN CHARACTER. ONE OF HIS INTIMATES SAID: "JOHN EATON COULD SEE FARTHER AHEAD THAN ANY OTHER MAN I EVER KNEW." ANOTHER TELLS HOW IN A CRISIS MR. EATON WAS ABLE TO BORROW $100,000 ON HIS UNSECURED NOTE. VISION, ENERGY AND INTEGRITY—THESE THREE WORDS WRITE THE STORY OF JOHN EATON'S SUCCESS AND THAT OF OILWELL.

Kenton Chickering

UNTIL HIS DEATH IN 1909 KENTON CHICKERING, VICE PRESIDENT, MANAGED OILWELL'S MANUFACTURING PLANT AT OIL CITY. "NEVER LEAVE A STRING OF TOOLS STUCK" WAS A SLOGAN HE DRILLED INTO MEN IN CHARGE OF THE OIL-FIELD STORES. NOT A SLOGAN ONLY. IT WAS A COMMAND.



Louis C. Sands

LOUIS C. SANDS, WHO SUCCEEDED MR. CHICKERING AS VICE PRESIDENT, KNEW THE OIL BUSINESS BY HEART. HE HAD BEEN A PRACTICAL OIL-FIELD WORKMAN FOR YEARS. JOINING OILWELL, HE SPECIALIZED IN SELECTING PERSONNEL, DEVELOPING NEW DEVICES AND EXPANDING THE COMPANY'S TRADE IN FOREIGN COUNTRIES.

An Appreciation

THE PETROLEUM industry has always cordially acknowledged the deep obligation it owes to the supply men. The supply stores have rendered a service to the oil producer without parallel in any other industry. They have been conceived and executed in the identical spirit of the industry they serve, imbued with the dominant purpose of achievement at all hazards.

In the beginning, when drilling was largely a venture of chance and the oil business commonly regarded as the height of speculation, the supply companies shared the adventure and risk with equal courage and persistence. Veterans declare the oil industry could not have developed so quickly without the unstinted support that the supply houses gave so unselfishly in the common enterprise.

When operating problems required solution, the supply man studied the producer's difficulties and counseled with him. To this many of the developments in equipment were due, the manufacturer seeking to provide what was most suitable for the particular job.

From that the supply men advanced to persistent study of the possibilities of improvement, anticipating the need for heavier and better equipment, for lower cost operation, for greater depths and pressures. This involved intensive technical research and experimentation, also very greatly expanded plant investment for the manufacture of improved appliances to meet changing requirements.

The supply man is often an actual, if not official, assistant to the production man, working side by side and hand in hand. Prompt with materials at discoveries, however far afield, at home or overseas, the supply companies, as a duty cheerfully assumed, have maintained branches stocked with a multitude of items even in days of retrenchment and deflation. Unfailing dependability explains the unique comradeship and mutuality between the oil operator and suppliers, far transcending the incidental relationships of the usual buyer and seller.

The seventy-fifth anniversary of Oil Well Supply Co., whose record practically parallels the history of the petroleum industry, is a notable milestone in industrial achievement. Oil Well Supply Co. is justly proud of its historic founders, contemporaries of the pioneers in oil, but it cannot be more so than the founders themselves would be of the truly remarkable achievements of the organization they established.

The oil industry pauses in its work to commemorate this noteworthy birthday of a famous member of its family, to whose Diamond Jubilee the succeeding one hundred twenty pages are devoted.

DEPARTMENT OF GEOGRAPHY
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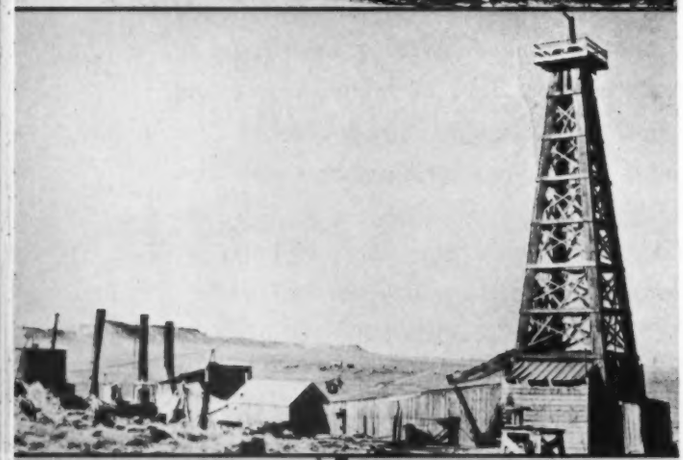
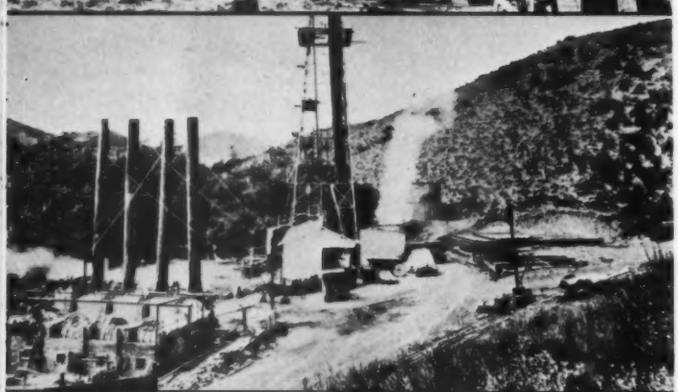




IT IS NOT DIFFICULT TO TRACE PROGRESS IN DRILLING PRACTICES BY REVIEWING CHANGES IN THE EQUIPMENT. ABOVE IS SHOWN THE ORIGINAL DRAKE WELL WITH COLONEL DRAKE IN THE FOREGROUND. NEXT A PENNSYLVANIA RIG OF THE 60's. THEN IS SHOWN A HEAVY CABLE-TOOL RIG AFTER THE TURN OF THE CENTURY, A HEAVY ROTARY RIG OF 1925 AND FINALLY AN OILWELL HEAVY STEAM-SAVING RIG USING ONLY ONE BOILER

75

IN THE BEGINNING was the Drake Well—1859; then came "Oilwell"—1862. The Derrick Publishing Co.'s Hand Book of Petroleum, which was published in 1898 at Oil City, Pa., contains the following statement:

"Mr. John Eaton, president of the Oil Well Supply Co., has been in the oil well supply business since the fall of 1861, and can therefore be properly called the father of the business. No other person connected with the business has been in it any such length of time."

Among things that capture one's interest when old-timers of the Pennsylvania oil fields recount early days are frequent references to that pioneer organization, such as: "Our bit had stuck 400 feet down, so Billy Manross, the driller, drove hellbent for breakfast to the Oil Well Supply store at Hill City——"

And again: "The one street at Red Rock was wheel-deep with mud and water, and if a horse or mule slipped and fell it drowned right there in its harness. We were trying to haul a boiler from the Oil Well Supply store when John McFate, the store manager——"

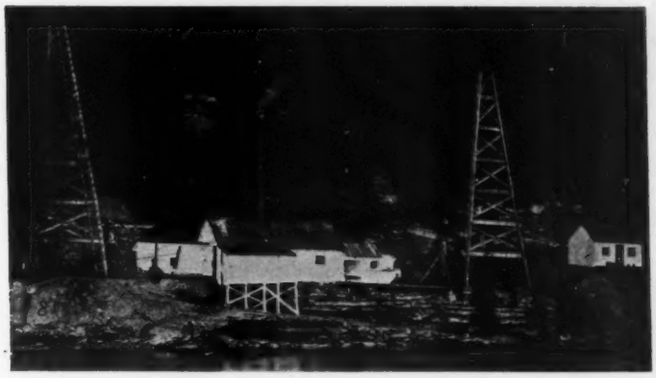
Always there was an Oil Well Supply store, to which the men in a young and eager industry turned confidently in those adventurous days when the oil region was a few square miles of Pennsylvania country straggling along Oil Creek, French Creek and the Allegheny River. As the oil region spread, the stores spread too. And so it is that in this year 1937 Oilwell is celebrating its seventy-fifth anniversary, with a business reaching to the uttermost corners of the earth, or wherever oil is found.

Jungle, snow, mountain, plain, desert or swamp—Oilwell is there.

It may sound queer, but the men who make the blood and bones of the Oil Well Supply Co. evince a rather casual interest in the anniversary. They are thinking of tomorrow, not yesterday. More concerned about tools for the next two-mile well than about a corking piece of work done in bygone days.

One can't feel around very much in the story of Oilwell (that's the nickname applied from the beginning) without discover-

Years of Progress



TWIN WELLS ALONG OIL CREEK IN 1863

ing that the spirit of John Eaton, Louis C. Sands and Kenton Chickering still pervades the institution.

John Eaton, referred to as father of the oil-field supply business, was the sort of man who would leave the imprint of his character on almost anything he touched. A look at that chin (after it had been divested of the Victorian beard which long had concealed it) makes that clear.

They still chuckle about the time in 1892 when Mr. Eaton returned to his desk after a visit to the barber shop, where the first shave in years had accomplished a facial transfiguration. "You cain't go in theah, suh," the colored usher expostulated; "that's Mistuh Eaton's offus!"

A rough delineation shows the steps by which the Oil Well Supply Co., once a restless idea in the keen young mind of John Eaton, has become an organization of world-encircling proportions. Its catalog has expanded from a modest pamphlet to a weighty volume of 700 pages, offering every kind of equipment or gadget for which a need might arise in the oil field, from a rivet to a 7,000-pound drilling bit; from a wire nail to an 85,000-bbl. storage tank.

Just as the oil industry itself has passed from the raw, turbulent thing it was in the early days of Oil Creek to the highly organized business of 1937, so the Oil Well Supply Co., advancing along parallel lines, has undergone a marvelous transformation. Keeping close watch on the oil and gas industry, Oilwell throws its immense resources—its engineers, its chemists, its skilled mechanics, its laboratories, its extensive manufacturing plants—into the task of solving those problems that come within its sphere.

PIONEERS: LEFT TO RIGHT, E. G. BURNHAM, KENTON CHICKERING, JOHN EATON, E. H. COLE AND E. T. HOWES

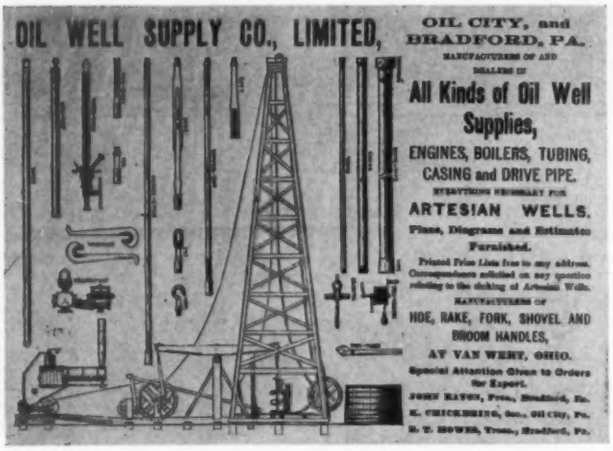
One of his former associates says, "John Eaton could see farther ahead than any man I ever knew." The more he saw of the lusty young oil industry the more his imaginative brain envisaged the opportunities unfolding there. So it was that the young sales representative went into business for himself, "backed only," he told in later years, "by the credit extended by a well-known pipe manufacturer."

An incident which goes far to explain why John Eaton could weather financial storms and hew his way through trouble that would have overwhelmed a less resolute, resourceful soul occurred in 1877. A customer owing $75,000 for boilers, engines, pipe and other oil-field equipment went into bankruptcy. It was a stunning blow to the rising supply house, but young Eaton, undaunted, went forth for new capital and came back, not with $75,000 but with $100,000, borrowed on his signature alone. In its earlier years Oil Well Supply Co., as its name indicates, was primarily a supply organization, acting as sales representative for makers of varied lines of oil-country equipment. Its manufacturing activities, however, were expanded steadily, beginning in 1867, until today it has five plants, whose products comprise most of the machinery and tools required in oil-field development and operation. Besides the immense Imperial Works, in Oil City, Oilwell has a plant in Oswego, N. Y., for the manufacture of boilers; one in Braddock, Pa., primarily for the manufacture of pumping machinery; one in Bradford, Pa., for the manu-

facture of packers, and one in Tulsa, where many of the smaller tools needed in drilling and pumping operations are made.

The Pennsylvania oil region, centering around Oil City, at the junction of the Allegheny River and Oil Creek, provided the company with a profitable trade

AN ADVERTISEMENT APPEARING IN 1882


OIL WELL SUPPLY CO., LIMITED,
OIL CITY, and BRADFORD, PA.
All Kinds of Oil Well Supplies,
ENGINES, BOILERS, TUBING, CASING and DRIVE PIPE.
ARTESIAN WELLS.
Plans, Diagrams and Estimates Furnished.
HOE, RAKE, FORK, SHOVEL AND BROOM HANDLES,
AT VAN WERT, OHIO.
Special Attention Given to Orders for Export.

for a long time. But the oil country could not stay pinched into that constricted area forever. Fortune seekers, driven by the same impulse that sent gold-mad adventurers rushing to the Klondike and Cripple Creek, were punching experimental holes in the earth's crust here and there in the feverish hope of finding new reservoirs of liquid treasure. (Geology of the mid-sixties conceived oil deposits as elongated subterranean lakes, set on end and slightly tilted.) Most of the holes were dry, but an occasional show of oil or gas intensified the quest. McKean County, 50 miles to the northeast of Colonel Drake's epochal discovery, was the scene of particularly zealous prospecting. One wildcat well near Port Allegheny emblazoned an ambitious placard: "Oil, hell or China!" It missed all three. In 1875 the rich Bradford field was opened, writing a new chapter in petroleum history and unlocking fresh opportunities for John Eaton's hearty enterprise.

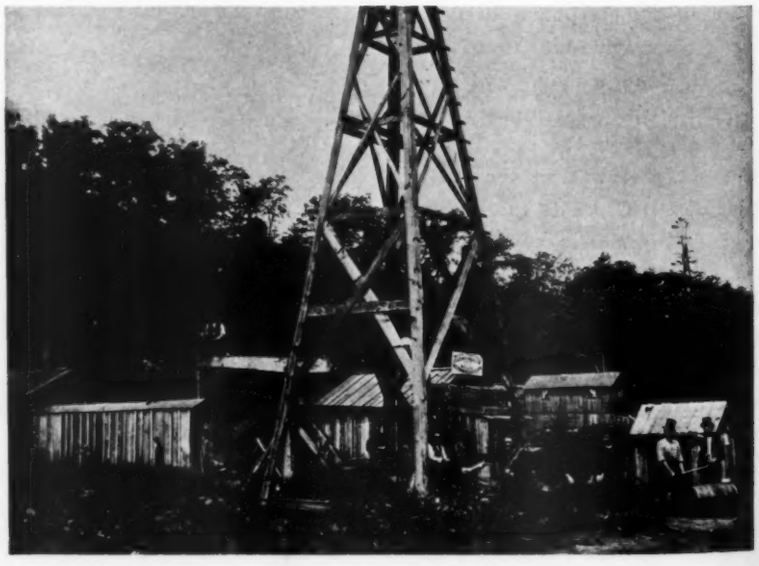
An omen as to how the annals of oil and Oilwell were to stride along together is seen in the fact that the first wrought-iron drive pipe with threads and couplings used in the oil fields was sold by John Eaton to Frederick Crocker for use in the second wildcat well drilled in the Bradford area in 1867.

Bradford's petroleum wealth stimulated the search for other pools. Along came Dewdrop, Jo-Jo and Cherry Grove, in Pennsylvania; Richburg, in New York; Macksburg, in Ohio; Mannington, in West Virginia—to mention just a few of a long train of boom fields, each of which had its flaming day and each clamoring for the tools which Oilwell provided. Gradually the company extended the range of its products to include rig irons, special woodwork for use in the building of drilling rigs, steam engines, and heavy cast-iron fittings for gas lines. Before the turn of the century it was making virtually a complete line of oil-field equipment, except manila and wire rope. Advertisements said the company was prepared to provide "Everything for oil wells—any size, and any depth, anywhere."

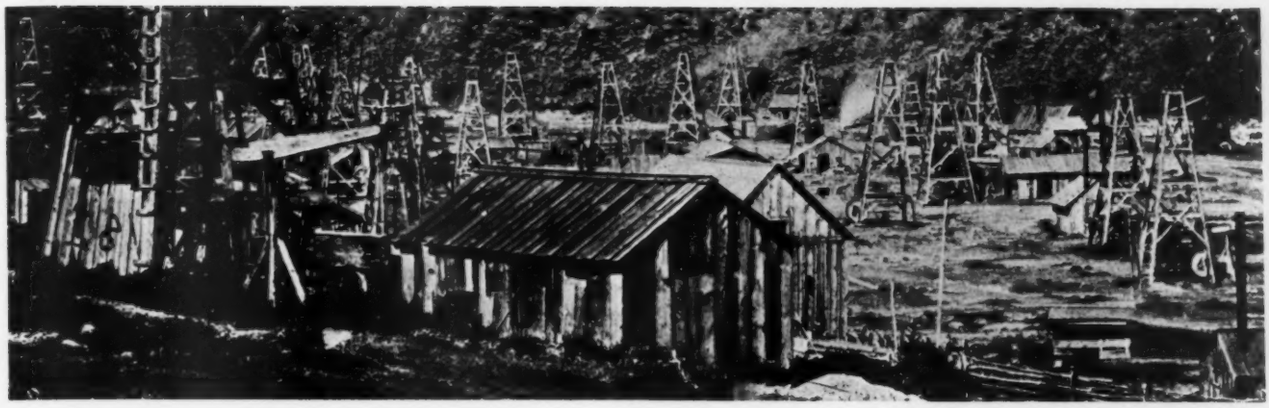
The day of the 10,000-foot well was still many years ahead. In the meantime Oilwell was keeping step with developments in the production, refining and transportation of oil. It was establishing stores in all the multiplying oil fields of this country, and it was shipping equipment to every foreign oil field. It was building a staff of trained technical men for its research and engineering work. It sent hundreds of practical oil men abroad to conduct field operations for its customers in foreign lands.

In 1900 the company bought 50 acres of land in Oil City on which to build an entirely new plant, the Imperial Works, for the manufacture of drilling and pumping machinery and general oil-field supplies. There are now on the site three big machine shops, two gray-iron cupolas and an electric steel foundry, two large forge shops, a sucker-rod shop, three commodious warehouses, a modern office building and the necessary auxiliary buildings all merged into an immense manufacturing unit. In 1929 the company acquired the Wilson-Snyder Manufacturing Corp.'s plant in Braddock, Pa., a Pittsburgh suburb, this adding to its already large

QUEER NAMES SPOT EARLY OIL CREEK HISTORY. HERE IS D. W. KENNEY'S ALLEMAGOOZELUM CITY WELL ON CHERRY RUN. A NEWSPAPER OF 1870 SAYS, "ALLEMAGOOZELUM TERRITORY IS EAGERLY SOUGHT"



DIAMOND OILWELL JUBILEE 1937 1859 75 years of progress



THE EMPIRE WELL, FUNKVILLE, PA., COMPLETED IN SEPTEMBER, 1861, WAS THE SECOND FAMOUS FLOWING WELL. THE FOUNTAIN (NICKNAMED "OIL CREEK HUMBUG" BECAUSE PARAFFIN DESTROYED IT), ON THE SAME FARM, WAS THE FIRST. THEY CALLED 1861 THE "FLOWING WELL YEAR," AND OIL DROPPED TO 5 CENTS A BARREL

list of products a complete line of pumps for oil-field service, pipe lines and refineries. The entire assets of the Oil Well Supply Co. were sold in 1930 to the United States Steel Corp. This action cemented a cordial relationship which had been growing through the years and definitely gave to Oilwell, already among the world's important business structures, the advantages of another great organization's resources and facilities.

No commercial enterprise ever rounded out three-quarters of a century of life without its worries, but time has proved that Oilwell's misadventures were but stepping stones to more solid ground under the ebb and flow of business. Looking over the reasons for Oilwell's record of achievement a cogent one is seen in the kind of men John Eaton drew about him. These men imparted to the growing organization something of their own personalities, so that resourcefulness and the desire to serve became embodied in the methods and policies of the company.

In the roaring sixties, or during the days of "Coal Oil Johnny" at the famous boom towns of Pithole and Petroleum Center, there was no uniformity in drilling and pumping machinery and equipment. Only hastily improvised tools and accessories were available. In traveling about the oil fields in connection with the supply business which he had already established, John Eaton and his associates observed this chaotic condition and determined to correct it. They studied the needs of the drillers and pumpers and, with vision and understanding, set about to meet them. "Never leave a string of tools stuck," Kenton Chickering used to tell his men in the days when a 1,000-foot well was something to talk about. And they never did. If a tool to do the job was not available, Oilwell made one that would. That is the way many new and improved tools were introduced. Oilwell has continuously pursued that policy of developing machinery and equipment to meet oil-field requirements, however exacting.

The result has been steady improvement in the design of the machinery and tools used in the drilling and operation of oil wells. Prior to the drilling of the Drake well, where steam power was effectively used, the primitive spring-pole method was popular for drilling water wells. It was also used for some years afterwards for drilling shallow oil wells. This device consisted of a long, flexible pole, the base of which was firmly anchored to the ground and the other end elevated by means of a fulcrum to a height of from 10 to 20 feet. To this movable end a manila cable with a pay-out device was fastened and to the end of the cable was attached the drill, which consisted of an iron bar, sharpened chisel fashion at the lower end. The oscillation of this spring pole, by man power, alternately lifted and dropped the tools, broke up and pulverized the formation. This illustrates the principle of percussion drilling as applied to oil.

The percussion or cable-tool system of drilling was thus used from the very beginning. An entirely new principle, the rotary method of drilling made its appearance at Beaumont, Tex., in 1900. This system (boring with mud flushing) made slow progress until about 1910, after which its development came more rapidly, particularly since 1920, and Oilwell figured prominently in these advances.

Consistently vigilant to promote the interests of the oil industry and his supply business, John Eaton early perceived the need for stronger and better equipment of standardized design to drill deeper wells and to withstand higher stresses and pressures. To control the quality and design of his products, the development of engineering service related directly to manufacturing was therefore a logical consequence. Thus came the fulfillment of John Eaton's vision—a complete service to the oil industry—primary engineering, designing, manufacturing, distribution, and a specialized oil field service.

The amazing evolution of oil field machinery and equipment is a story too long to relate here, but John Eaton accepted the challenge of a future, giant industry to meet its multiplicity of varying and exacting needs.

"OILWELL"...

BENJAMIN F. HARRIS
President
Pittsburgh, Pa.

FRED F. MURRAY
Vice President
Dallas, Texas

JOHN M. SHIMER
Vice President
Dallas, Texas

WM. H. WHITTEKIN
Vice President
Dallas, Texas

J. H. FOSTER
General Attorney
Dallas, Texas

P. P. FINDLEY
Asst. Gen. Atty. & Secy.
Dallas, Texas

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Asst. Treasurer - Credits
Dallas, Texas

R. C. STAMETS
Mgr. Tubular Dept.
Dallas, Texas

G. A. HAYS
Sales Mgr. Machinery
Dallas, Texas

MARTIN G...
Mgr. Mate...
Dallas, Tex...

L. E. TRACY
Sucker Rod Sales
Dallas, Texas

C. C. EGNER
Supply Sales
Dallas, Texas

MARK BARKHURST
Sales
Ponca City, Okla.

R. F. CANN
District Sales Mgr.
Fort Worth, Texas

R. H. CHRISTY
District Sales Mgr.
Houston, Texas

D. L. C...
District Sa...
Okla. City...

P. H. SHEPHERD
District Sales Mgr.
Casper, Wyo.

K. B. WINSTEAD
District Sales Mgr.
Longview, Texas

B. R. CLEELAND
Div. Credit Mgr.
Los Angeles, Calif.

W. H. LAURY
Mgr. of Sales
Los Angeles, Calif.

W. F. PARKER
Mgr. Tubular Sales
Los Angeles, Calif.

R. W. MA...
Sales...
Bakersfi...

F. D. SMITH
Dist. Sales Mgr.
Mt. Pleasant, Mich.

R. P. STEELE
Dist. Sales Mgr.
Oil City, Pa.

J. F. VAN NORT
Mgr. of Sales
Pittsburgh, Pa.

L. M. WOLTZ
Dist. Sales Mgr.
Columbus, Ohio

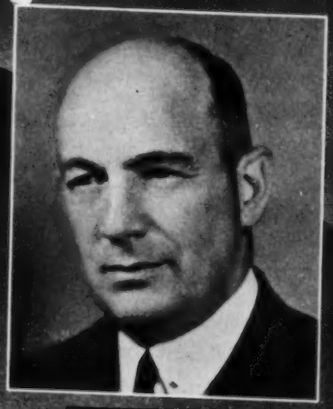
G. E. NIVER
Mgr. Export Div.
New York, N. Y.

C. L. ...
Sales M...
New Y...

Executive and General Staff

...ON F. PAYNE
...ice Pres. and Treas.
...Dallas, Texas

D. J. BROWN
Vice-President
Pittsburgh, Pa.



LESTER H. KEIM
Vice-President
Los Angeles, Calif.

GEO. W. ROONEY
Auditor
Dallas, Texas

...AND
...Midwest
...ers

E. E. ROBBINS
Mgr. of Sales
Tulsa, Okla.

M. W. PHELPS
Mgr. of Sales
Houston, Texas

A. R. MAIER
Chief Engineer
Dallas, Texas

J. W. ADAMS
Chief Serv. Engineer
Dallas, Texas

A. C. WIMMER
Division Credit Mgr.
Dallas, Texas

...AN

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District Sales Mgr.
Wichita, Kansas

B. L. HARRIS
Sales
Bartlesville, Okla.

M. F. HAZEL
District Sales Mgr.
Odessa, Texas

M. E. KEENAN
District Sales Mgr.
Calgary, Canada

WM. MISKIMINS
District Sales Mgr.
Pampa, Texas

G. F. GOETZINGER
Div. Credit Mgr.
Oil City, Pa.

W. C. KAMSEY
Div. Mgr. Machy. Sales
Oil City, Pa.

A. D. OTTO
Sales
Chicago, Ill.

J. S. LEGGETT
Dist. Sales Mgr.
Charleston, W. Va.

M. J. LOWE, Jr.
Sales
Bradford, Pa.

E. H. ROOS, Mgr.
Wilson-Snyder Plant
Braddock, Pa.

F. W. PLANK
Supt., Boiler Works
Oswego, N. Y.

L. L. MACKOWSKI
Supt., Packer Works
Bradford, Pa.

C. E. GALLMAN
Supt., Tulsa Plant
Tulsa, Okla.

F. B. BAYLESS
Chief Metallurgist
Oil City, Pa.

Manufacturing

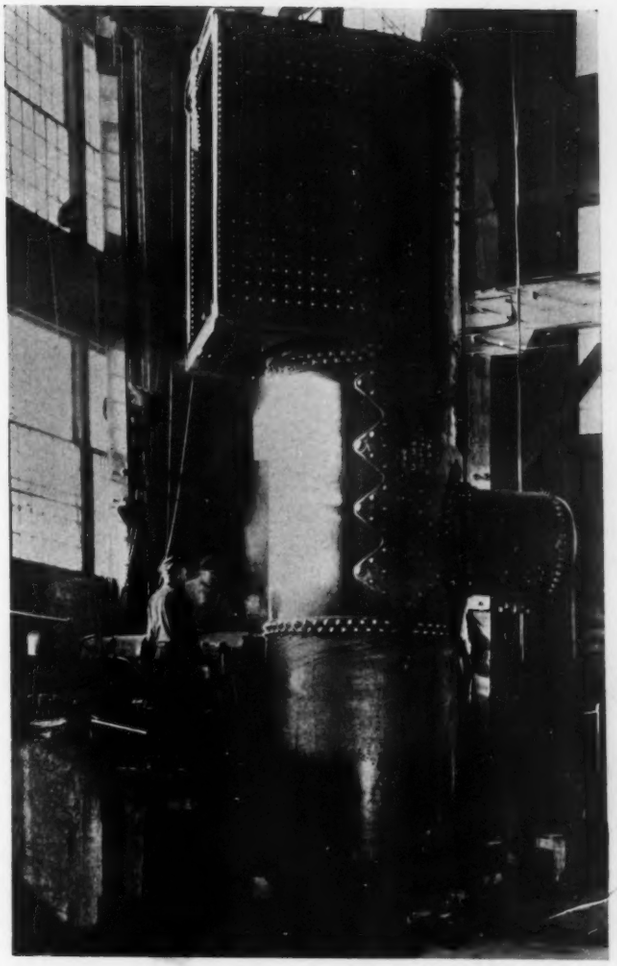
Born in Pennsylvania as a supplier of oil production equipment in the very first oil field surrounding the Drake well, it was natural that Oilwell's first manufacturing plant should be located there. This center of oil had the added advantage of being close to the chief source of iron and steel. Thus influenced, the company manufactured its first oil field equipment in a small shop facing on Sycamore Street in Oil City, Pa., in 1867. A single-cylinder 6 by 9-inch steam engine provided the power to drive the few tools. Even in this small way a variety of oil field "hand-tailored" tools and equipment was made there to meet the needs and wishes of the individual drillers.

IMPERIAL WORKS AT OIL CITY, PA.

This marked the beginning of the company's long practice of fulfilling the special requirements of its customers. Repeated requests for certain tools influenced Oilwell to standardize manufacture and in that manner many such tools and devices became the standard for the entire oil industry. Thus Oilwell had assumed the role of a real pioneer. The confidences fostered between the men in the oil fields and the manufacturer in those days has been maintained throughout the 75 years during which the company has been developing and perfecting oil field equipment. Today many A.P.I. tool and equipment standards trace their origin to Oilwell. The first major expansion of Oilwell's manu-

BOILER WORKS AT OSWEGO, N. Y.

Plants



RIVETING THE CIRCUMFERENTIAL SEAMS OF OIL FIELD BOILER AT OSWEGO, N. Y.

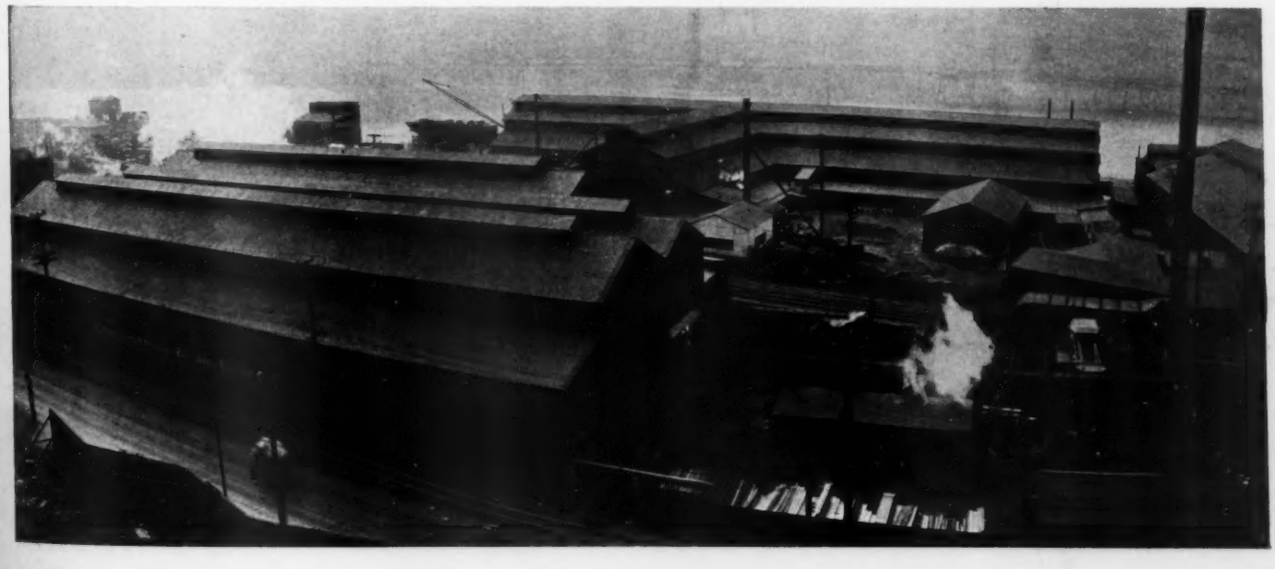
facturing was to establish a sand-reel plant in Bradford, Pa. This was soon enlarged by the addition of a combination blacksmith, tool and machine shop and later this became the packer works, and the modernized plant, though small, remains as an important unit among the company's manufacturing facilities.

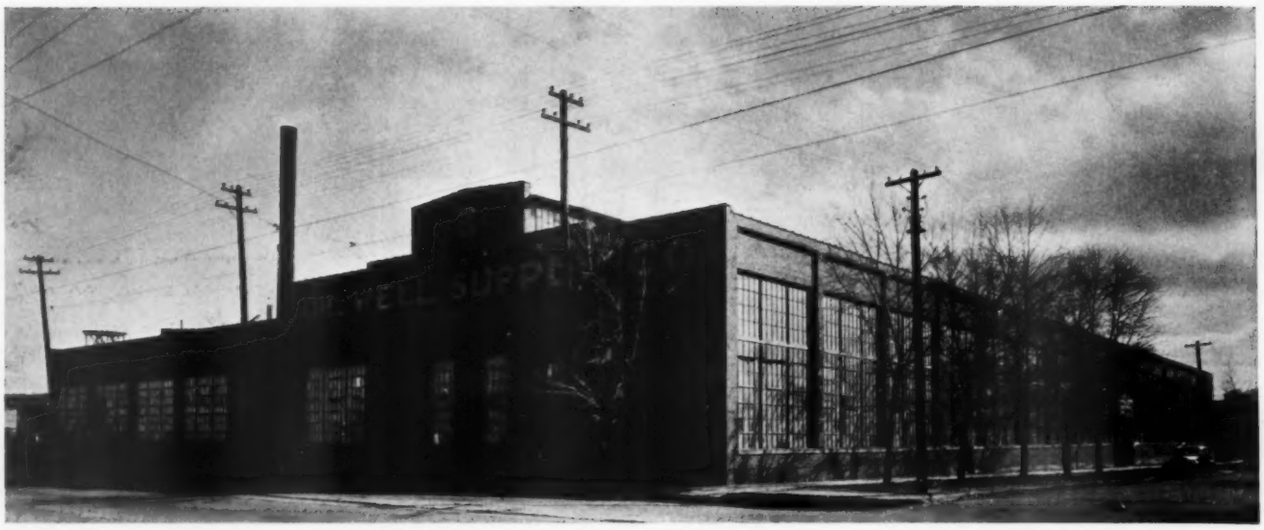
In 1889, in Pittsburgh, Pa., to meet a pressing demand for new and improved drilling tools, Oilwell built the world's largest cable-tool plant. In the same year the Innis Engine Works of Oil City, Pa., was acquired and there the company built many of its early steam engines and pumping powers. Three years later the company began producing its own tubular goods in a second plant located in Pittsburgh. At that time the unit was known as the Continental Tube Co. and it later became a part of the National Tube Co.

In 1900 the company took a most important step in its expansion program for in that year it purchased 50 acres of land at Oil City. Here was built the great Imperial Works in which much of the manufacturing work of the company has since been concentrated.

Then as if to meet the temporary needs of a roving oil industry, mills were operated at Van Wert, Ohio, and Poplar Bluff, Mo., for the production of wooden sucker-rods. These plants operated for many years, but were disposed of with the advent of steel sucker-rods. It is interesting to note, however, that wooden sucker-rods still have considerable use in water-well pumping and the Poplar Bluff plant is still operating. In the early days of the twentieth century the com-

WILSON-SNYDER WORKS AT BRADDOCK, PA.





MANUFACTURING PLANT AT TULSA, OKLA.

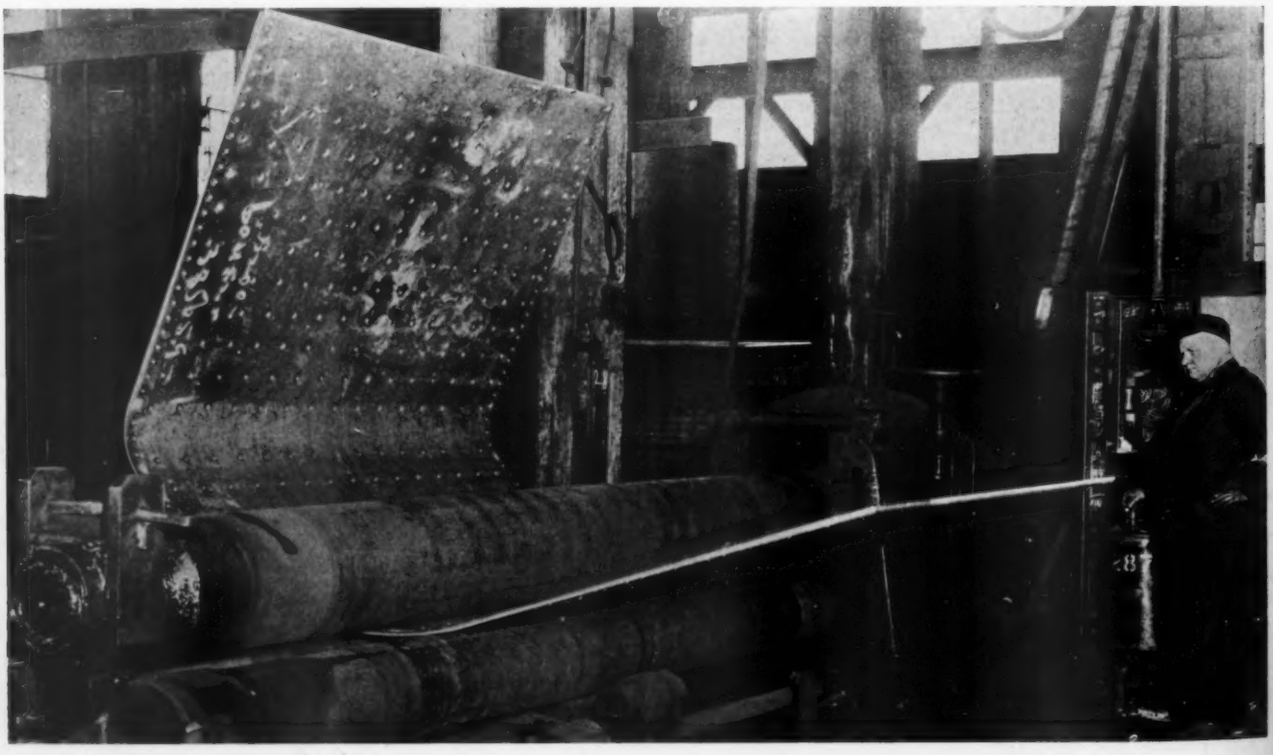
pany also acquired a rig and reel plant in Parkersburg, W. Va. This, however, was later disposed of to the Parkersburg Rig & Reel Co.

In 1900 another important step was taken by the company in entering the boiler manufacturing business. In that year Oswego, N. Y., already famous for its steam boilers, became the site of a new and completely modern boiler plant owned by Oil Well Supply Co.

PACKER WORKS AT BRADFORD, PA.

In the succeeding years these manufacturing facilities were rounded out with an increasing

BENDING HEAVY PLATE FOR BOILER CROWN SHEET IN THE OSWEGO, N. Y., MANUFACTURING PLANT



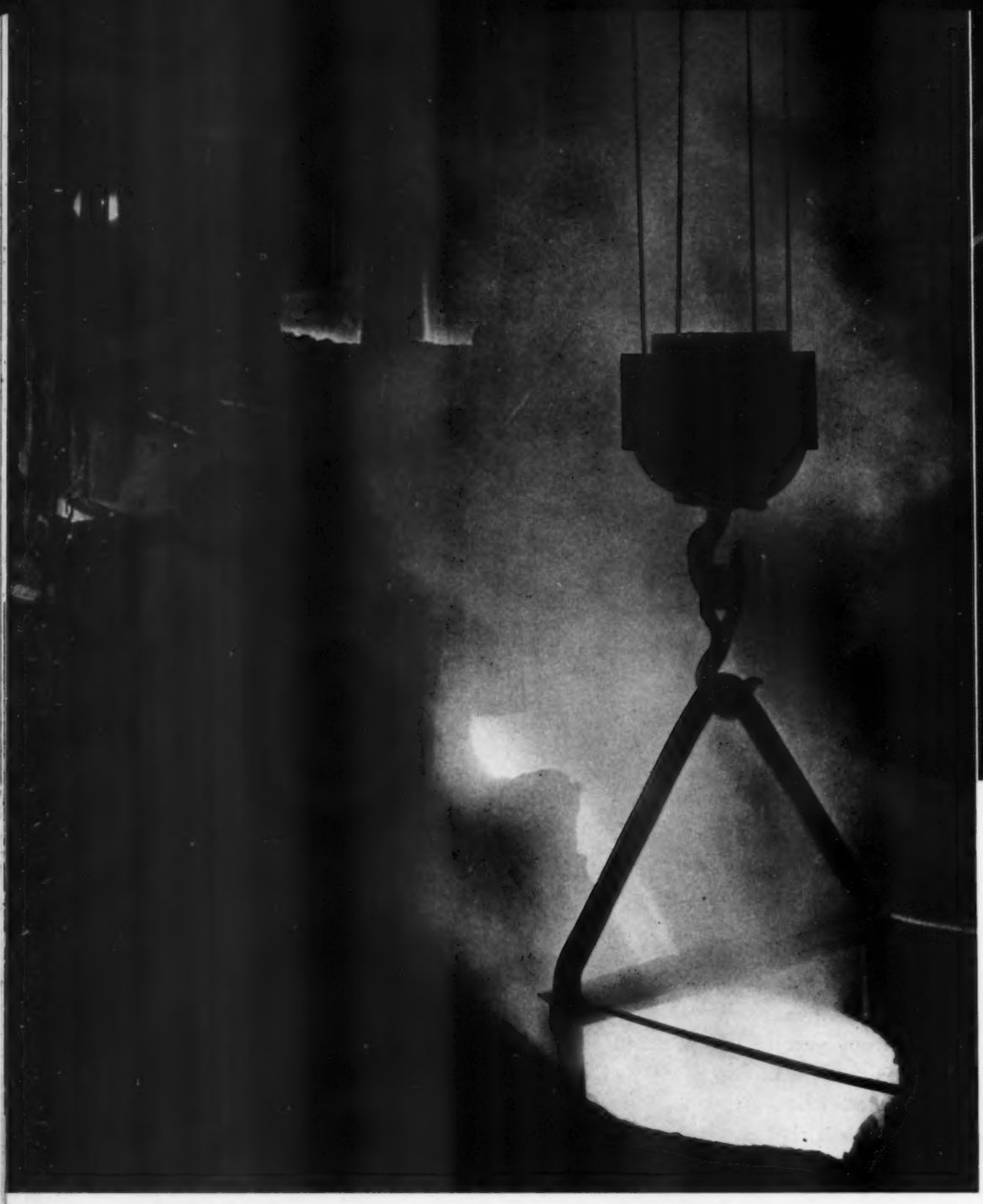
concentration at the Imperial plant in Oil City which has been steadily expanded.

Then in 1929 additional facilities were acquired at Braddock, Pa., by the purchase of Wilson-Snyder Manufacturing Corp. Here the famous Wilson-Snyder slush pumps were manufactured and a complete line of refinery hot-oil pumps, certain types of pipe-line pumps and other machinery, including "Erie-Ball" steam engines. Except for mention of the assembling and repair shop in Tulsa and various field service shops in the oil fields, the history of Oilwell factory development is thus briefly recorded.

In September of 1930 the entire assets of Oil Well Supply Co. including Wilson-Snyder Manufacturing Corp. were purchased by the United States Steel Corp. Such a manufacturing alliance has afforded continued growth and made available the very best in metallurgical research and every facility in steel production. But this does not give the complete picture of just what Oilwell is doing. The painstaking choice of materials, the engineering and research, the fine craftsmanship that enter into the manufacture of every product of these plants are not the result of Oilwell's acquiring certain properties. Nor do they result from the individual genius of any one man. Instead, it is a background of these many, many years of experience applied by Oilwell's well-chosen personnel to sense the ever-changing needs of the oil fields. Pride of accomplishment extending from father to son is the type of spirit that exists in Oilwell's manufacturing plants. Oilwell can point with pride to 81 em-

THOUSANDS OF PATTERNS STORED IN THE AIR-CONDITIONED BUILDING AT THE OIL CITY PLANT. EACH IS CLASSIFIED AND INDEXED FOR ITS SPEEDY IDENTIFICATION

PATTERN-MAKERS DEVISING ACCURATE FORMS, SO INDISPENSABLE TO THE PRODUCTION OF GOOD CASTINGS



THE METAL MIX, THE SLAG AND THE TEMPERATURE HAVE BEEN CHECKED AND FOUND SATISFACTORY. THE FURNACE IS TILTED AND THE ELECTRIC STEEL FLOWS INTO THE LADLE TO BE POURED INTO THE MOLDS

ployes who have each been at Imperial Works for 25 years, and two of these together represent a century of service.

Among the plant group, the Imperial Works, or the Oil City plant, offers the best opportunity to see the breadth of the company's operations and if a little time is spent in following through the manufacture of a single item one cannot fail to get some idea of how carefully the raw material is chosen, how thoughtfully each piece is processed, and how thoroughly each is tested and inspected before leaving the shop.

The Imperial Works is a self-contained unit composed of gray-iron and steel foundries, pattern-shop, tool-rooms, die department, forge-shops, machine-shops, heat-treating departments, research and testing laboratories together with the usual warehouses, steam power plant, including large turbo-generators, etc. In all there are 825 major production machine tools. The plant uses monthly something like 3,000 tons of steel, not to include the supplies of pig iron and steel scrap used in its foundries. The gray-iron foundry has a capacity of 800 tons a month. The very best pig iron, bought on rigid chemical analyses, is secured from the Carnegie-Illinois Steel Corp., also a U. S. Steel subsidiary. All of the castings made contain a large percentage of steel scrap to insure a fine grade of semisteel suitable for slush pump and other high-pressure castings of the most difficult character to make.

In the gray-iron foundry most modern molding methods are used, including the pneumatic bumper and roll-over type of equipment for use in making large castings. The molds for the smaller castings are made in molding machines by the squeeze process.

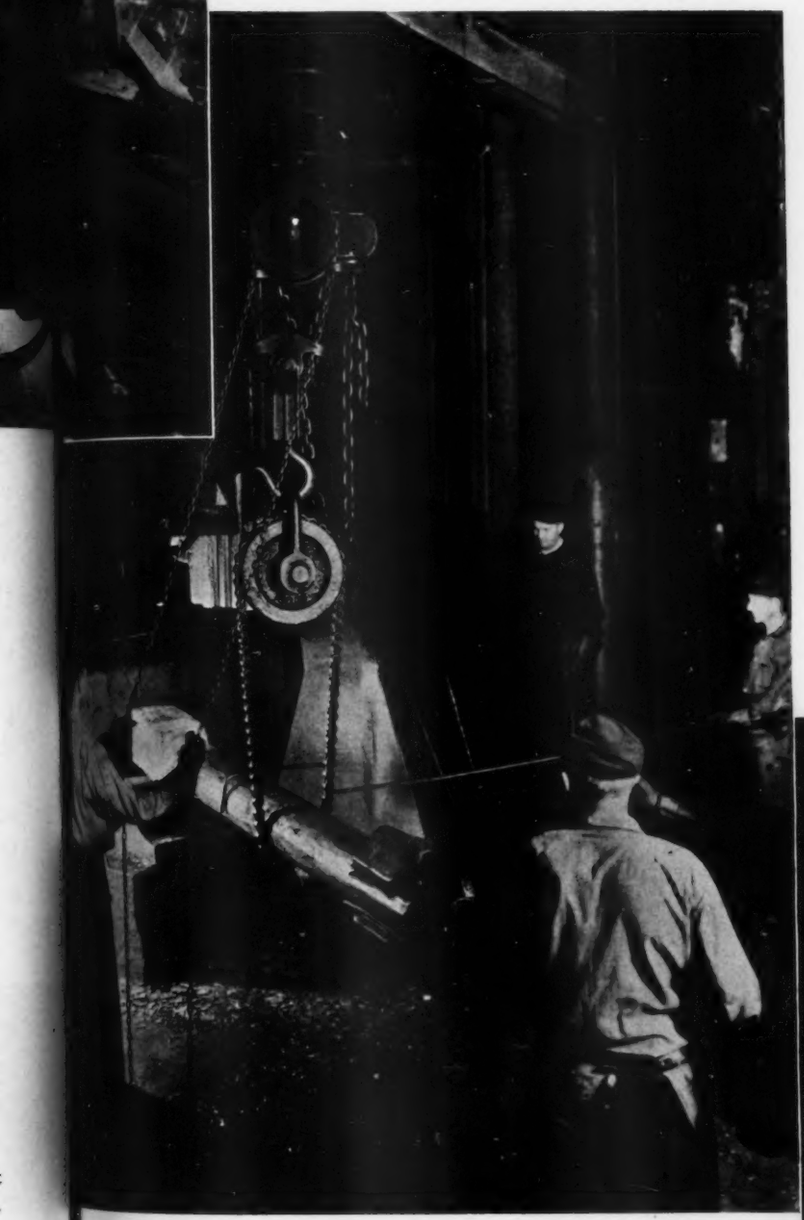
The steel foundry is equipped with a Heroult electric steel melting furnace capable of pouring a 5,000-pound steel casting.

Operating in conjunction with the steel foundry are gas-fired annealing furnaces which provide for maximum uniformity and strength of the steel castings and freedom from warping during machining. Coupons are taken for laboratory analysis following each pour, and of course the usual laboratory control over the materials entering the melt is exercised.

The added precaution of testing the molding and core sands for permeability, porosity and moisture

content is taken as every shipment of sand is received. Most closely associated with the molding

IT IS A REAL JOB TO CLEAN AND DRESS DOWN STEEL CASTINGS. HERE IS A BATTERY OF LARGE SNAGGING WHEELS DOING THIS WORK



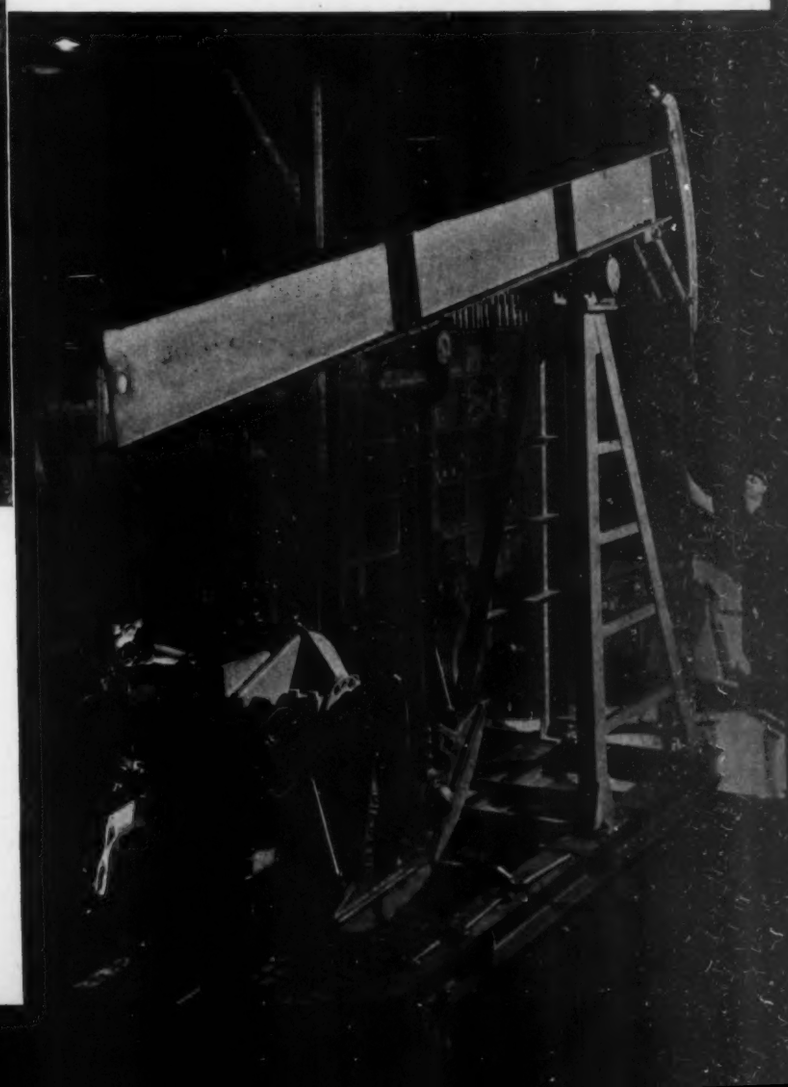
ALLOY STEEL BILLETS HEATED IN PYROMETER-CONTROLLED GAS-FIRED FURNACES ARE FORGED INTO HEAVY-DUTY CRANKSHAFTS BY THIS MASSIVE DOUBLE-FRAME STEAM HAMMER

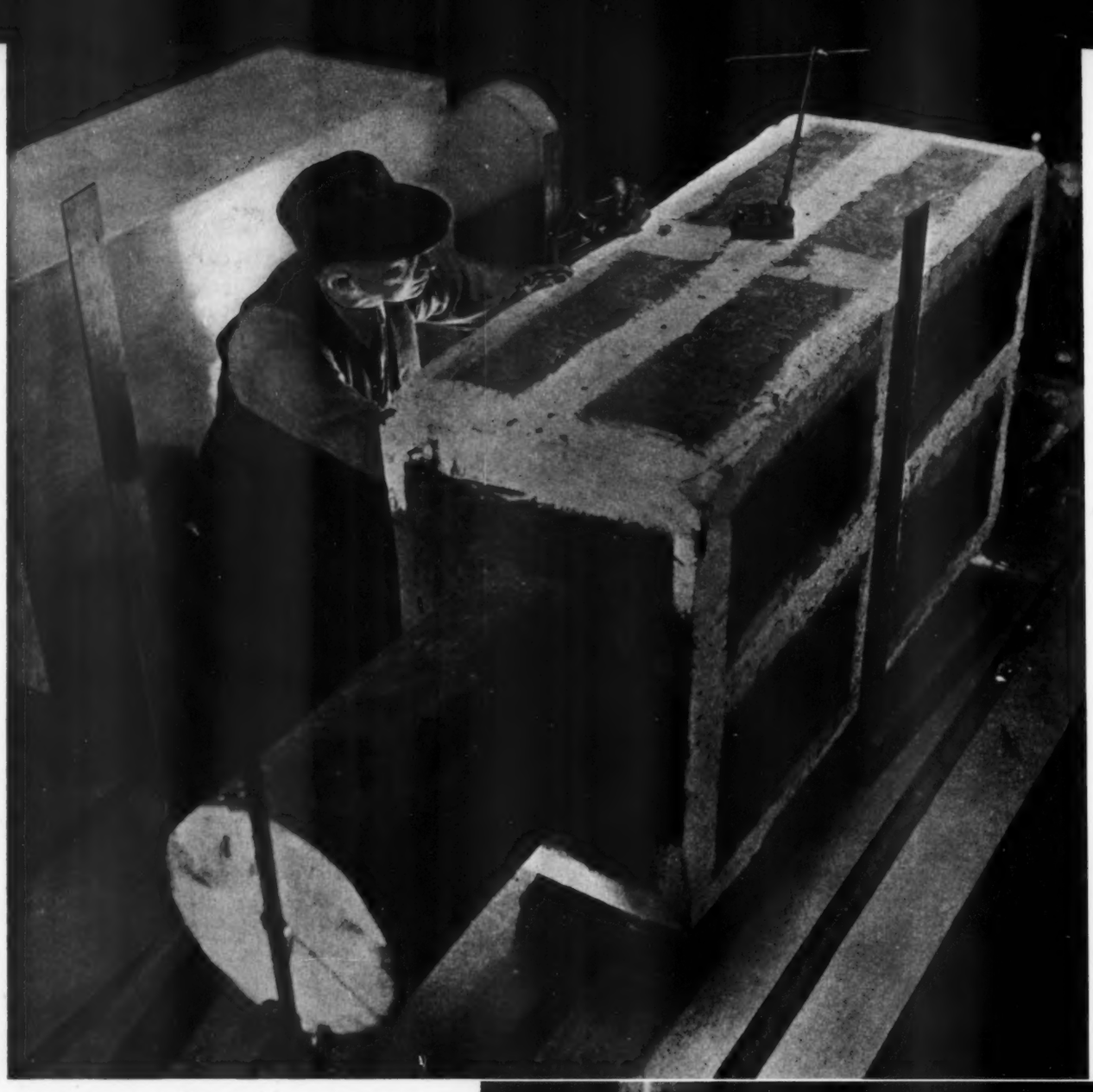
plant is the pattern shop. Only the best pine and mahogany are used and the pattern makers who shape these patterns have developed a skill that provides an unusually true casting. In the pattern storage department a visitor can see the wooden or metal pattern of every piece of equipment Oilwell has ever cast, some few of which are approaching the three-quarters of a century mark in age. To store and catalog all of them under satisfactory conditions of temperature and humidity represents a large item of expense, but this practice is followed to enable Oilwell to replace almost any piece of its equipment at any time regardless of when the original item was made.

In the forge shops steam drop and board drop hammers are provided to handle anything from the smallest item up to a 24-inch cable-tool bit. Specialized forging operations such as are used in making bullplugs, swedge-nipples, turnbuckles, slush pump valves and valve seats, etc., constitute an impressive output from this department. Here skilled workmen shape many kinds of cable tools, crankshafts, rotary bits, drill-collars and small items.

As in the case of the patterns, dies used in making any of these forgings are carefully preserved after use. This is done to provide a repair part at any time an Oilwell customer requires a replacement, even though the particular piece of equipment he is operating has been out of production for a number of years. Probably the most interesting divisions of the Imperial Works are the machine shops. In these shops can be seen more than 100 lathes, ranging in

EVERY PUMPING UNIT IS RUN-IN, SHOP INSPECTED AND RECHECKED UNDER LOAD, THUS INSURING TROUBLE-FREE ASSEMBLY AND OPERATION IN THE FIELD





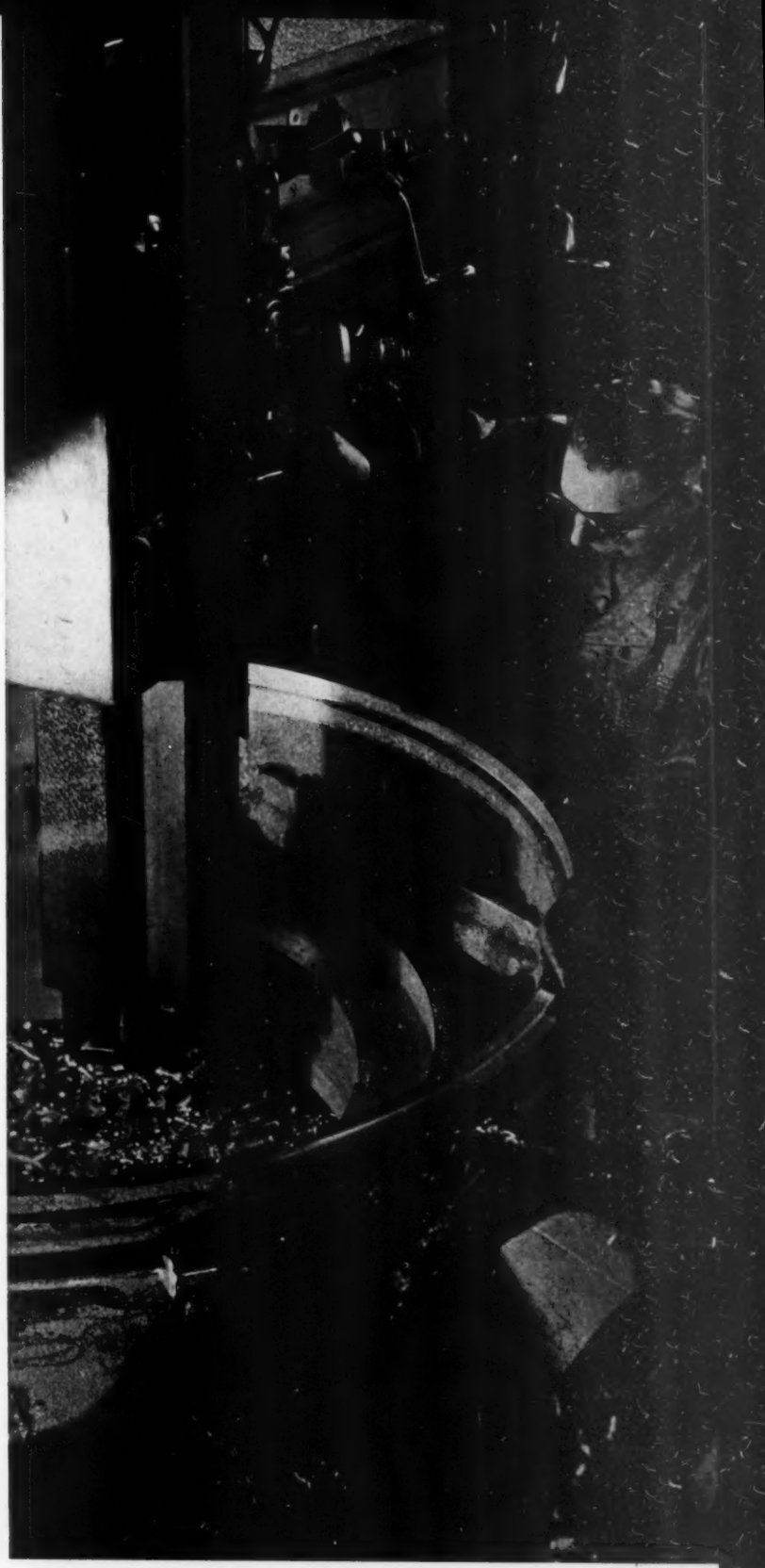
LAYING OUT WITH PAINSTAKING ACCURACY IS REQUIRED ON THESE 5-TON FORGED STEEL BLOCKS WHICH ARE MADE INTO THE FLUID ENDS OF WILSON-SNYDER HOT OIL PUMPS WHICH COMMONLY HANDLE OIL AT 800 DEGREES F. IN MANY REFINERIES

size from the bench-type to heavy ordnance lathes capable of boring a grief stem 90 feet long. At another point honing machines are in use which produce surfaces of mirror finish. Twenty vertical boring mills having tables ranging in size from 24 inches to 108 inches are located here. Castings measuring up to 112 inches in diameter and weighing 10 tons are being machined. Ten horizontal boring mills ranging in size from 2½-inch bar to 7½-inch bar handle the largest castings entering the assembly of heavy rotary drilling equipment and still leave a sufficient margin to enable Oilwell to handle larger castings if the demand arises. A large number of turret lathes, milling machines, and miscellaneous machine tools ac-

UNIFORM RESULTS ON HEAT-TREATED PARTS ARE MAINTAINED BY MEANS OF THE THERMOSTATICALLY - CONTROLLED TEMPERING BATHS. HERE SLUSH PUMP VALVES ARE BEING HEAT-TREATED FOR MAXIMUM LIFE

count for the more important items in the department. The precision demanded here typifies the spirit of the entire manufacturing department of Oilwell, and to insure maintenance of that precision every machined surface is minutely inspected.

Within the past three years major machine-tool replacements and additions in excess of $300,000 have been made, including vertical and horizontal boring mills, automatic screw machines and innumerable small machines which come into use in perfecting every detail in the manufacture of Oilwell's horizontal and vertical steam engines, oilbath rotaries, swivels, hoists, traveling and crown-blocks, geared powers, pumping units, rig-fronts, hoists, etc. An Imperial Works product of which the company is especially proud is known to the trade as the "Di-Hard" slush pump liner. In the manufacture of these liners a "diamond-hard" metal is centrifugally inlaid or spun on the inner surface of the steel liner-shell while the shell is rotated at a speed of 1,500 r.p.m. and held at a temperature of 2,200° F. After the liner has been annealed it is ground and then honed for approximately one hour. A great deal of attention is paid to constructions which can be fabricated by welding together structural steel shapes, plates and steel castings, thus to provide machinery of exceptional strength yet light in weight. Innumerable pumping equipment items, skids and bases for drilling machinery, etc., are thus constructed by electric welding. A unique feature of this work is the use of large suspended jigs which permit rapid assembly of the parts and their welding together while clamped firmly in place; thus each assembly is identical in having been assembled directly into a jig for the purpose. Also the welding proceeds almost without interruption and can so be done more perfectly as well as most rapidly in the interests of strength and economy.



MASSIVE, RIGID AND POWERFUL TOOLS, CAPABLE OF PRECISION WORK, MACHINE THE TOUGH HIGH-TENSILE ELECTRIC STEEL CASTINGS, SUCH AS THE LARGE OILBATH ROTARY BASE BEING BORED ON THE VERTICAL BORING MILL HERE

No summary, however brief, of the work being handled by the Imperial plant can be concluded without giving particular attention to the manufacture of Oilwell sucker-rods, heat-treated from end to end in a most ingenious sequence, taking the rods in and out of a liquid quench, temper-drawing and stretch-straightening. Here has been assembled the most modern and compact gas-fired heat-treating plant in the world. The raw steel rods are received into the plant in bundles, the quality of the steel having been carefully checked, and after the forging operation by which the ends are upset to provide an enlargement for the joints these rods enter the heat-treating furnaces. The entire heating area of the furnaces is automatically pyrometer controlled. The furnaces are the continuous type in which the rods are conveyed through the heating zone at an accurately maintained, predetermined rate resulting in an absolutely uniform temperature over the entire rod preparatory to its entering the quench tank. The rods at a bright red heat are mechanically quenched. The duration of the quench and the temperature of the quenching bath are automatically controlled at all times, resulting in a uniform grain structure of the steel. The second independent heat-treating operation is that of the drawing heat which is

AUTOMATIC MULTIPLE-SPINDLE MACHINES WITH SPECIALLY-DESIGNED TOOLS PERFORM MIRACLES OF SPEED AND ACCURACY IN PRODUCING SMALL PARTS

applied to the rods in another furnace of the same general type and with the same precision control. After the rods have been held at the drawing temperature for the required time, they are mechanically placed in the stretch-straightening machine and while at the drawing temperature they are stretched beyond the elastic limit inherent to the particular steel at this elevated drawing temperature. A predetermined tension is maintained until the rods have cooled sufficiently. All the operations in this cycle are automatically controlled as to time, tension and temperature. As the rods are placed under tension in this stretch-straightening while hot, it will be seen that each rod is simultaneously "p r o o f-tested" for defects in the steel, non-uniform heating, and for quenching cracks. If any such defects are present the hot rod will "n e c k down," or fracture at the weak point and so be rejected.

From the heat-treating furnaces and stretch-straightening, the rods then pass to the threading machines where their manufacture is completed. Here a metal protector is placed over the threads, after final inspection, and the rods are ready for shipment.

Obviously a plant as large as that at Oil City requires the specialized services of auxiliary departments, each of which is essential to the smooth operation of the plant. For example, in addition to the heat-treating operations in connection with sucker-rods, a separate department handles the heat-treating of other items. In this department may be seen the small electric furnaces as well as the car-type batch furnaces. Here special emphasis is placed upon the annealing of gears, sprockets, bearing races, rotary bearings, cable tool bits, sucker-rod couplings and shafts. To facilitate the quick and safe handling of materials from one department to another a sizable group of men is kept busy operating cranes and running

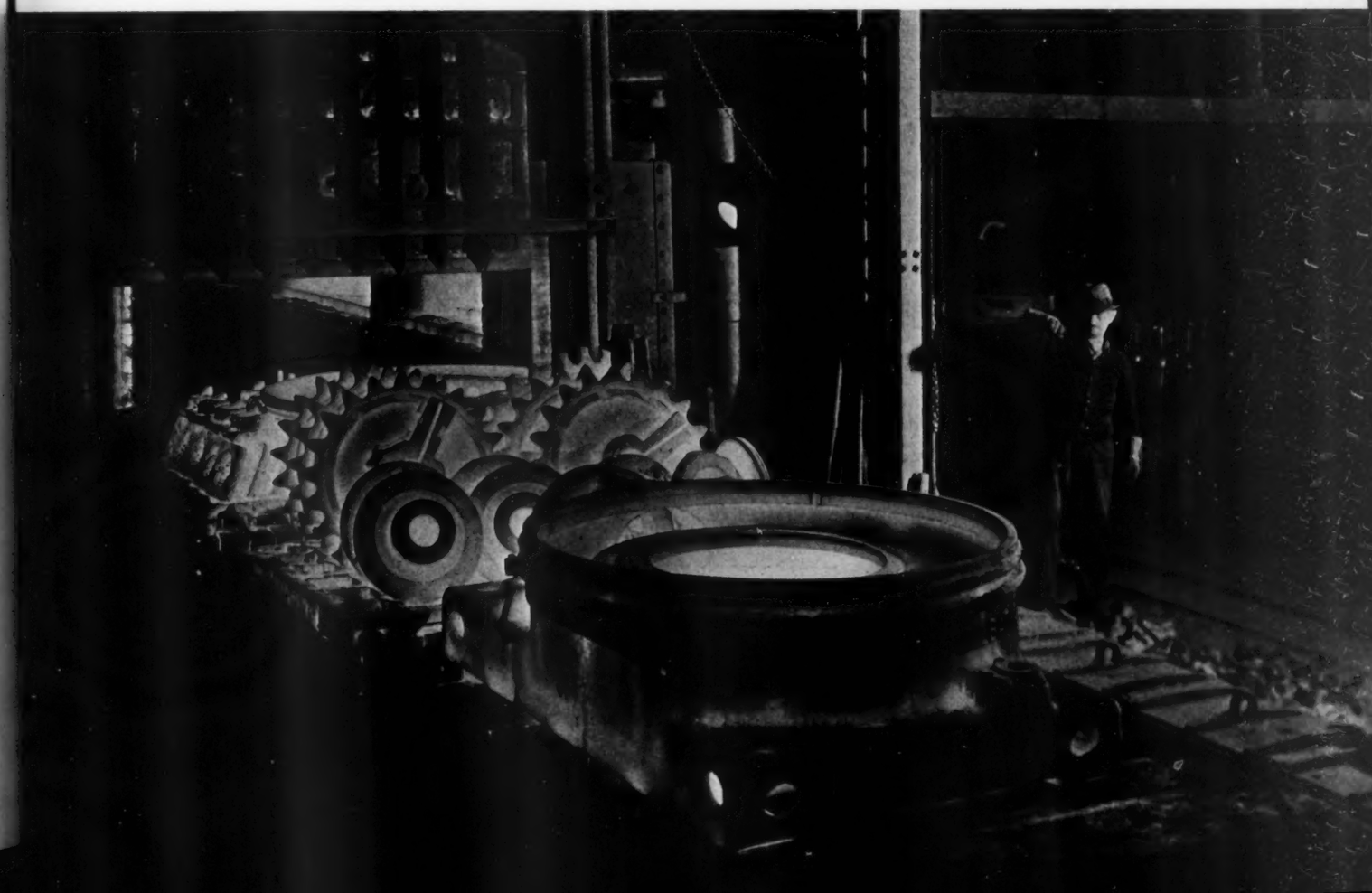
NINETY-F O O T ORDNANCE LATHES ARE USED FOR DRILLING GRIEF STEMS AND DRILL COLLARS TO GUN-BARREL ACCURACY

gasoline-powered locomotives. Some of the latter operate on narrow-gauge and some on standard-gauge tracks that weave in and out of the shops and warehouses on the plant site. Cranes capable of handling loads up to 25 tons run overhead in the foundries while smaller ones are used in the other shops.

To keep the plant supplied with electric and steam power, a corps of men is employed in a well-equipped power house located on the plant site. In the operation of the plant, a part of the necessary gas supply is produced by the company's own wells situated some 10 miles distant, and a dozen men are kept busy maintaining a constant flow of gas from these properties. Of equal importance in serving the plant is the corps of maintenance men comprising carpenters, metal workers, electricians and millwrights, whose work is of necessity general throughout the plant.

BORING A POWER SLUSH PUMP FRAME TO RECEIVE CRANKSHAFT ROLLER BEARINGS. COSTLY MACHINE TOOLS AND SKILLED MACHINISTS ARE REQUISITES

Operating also, somewhat as service departments, are the various tool rooms in which 25 men are employed, each keenly alert to the need of keeping tools in good order and designing special tools, jigs, fixtures and check gauges to promote greater shop efficiency and insure the complete interchangeability of equipment parts. Although referred to as the Braddock plant of the Oilwell group, the title "Wilson-Snyder" has for long been so firmly fixed in the minds of those who know its products that even in the Oilwell family it is best known as Wilson-Snyder Works. Located 10 miles up the Monongahela River from Pittsburgh's Golden Triangle, this plant manufactures the Oilwell and Wilson-Snyder slush pumps,

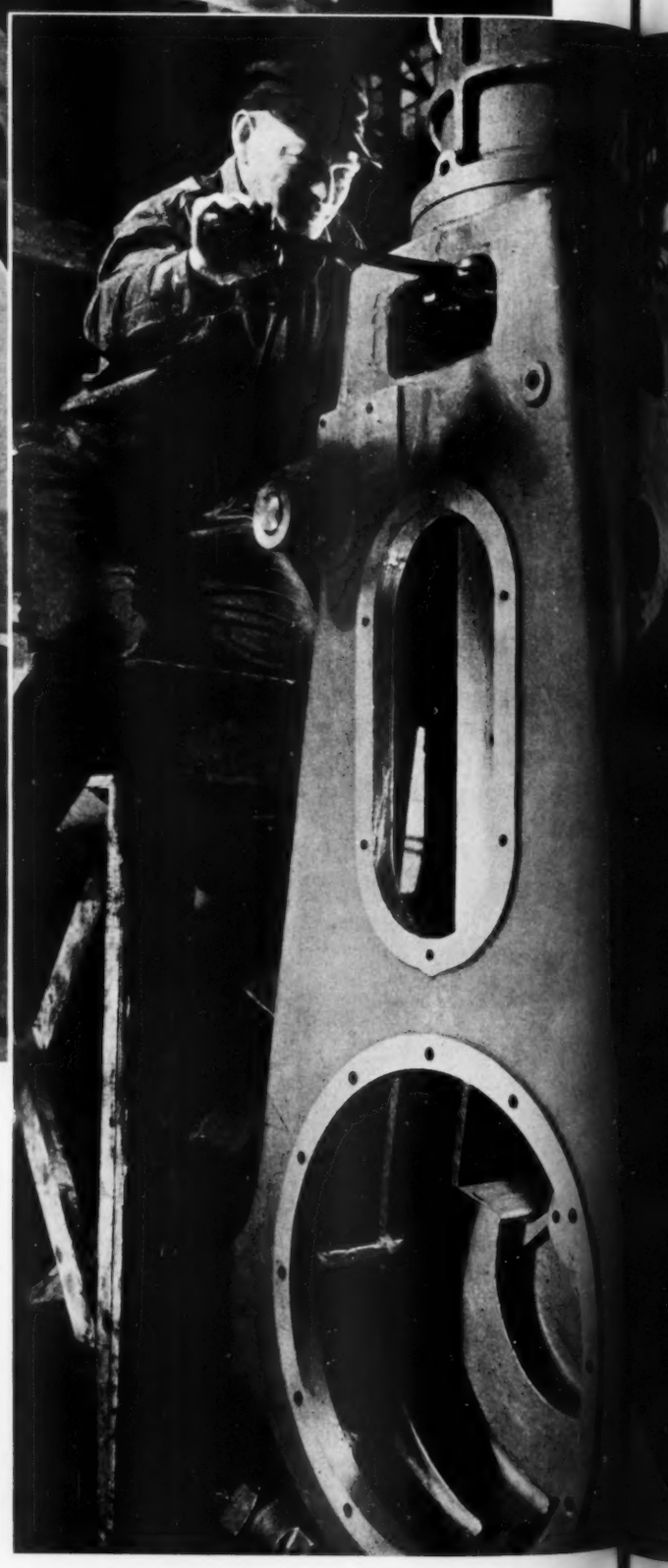


ASSORTMENT OF ELECTRIC STEEL CASTINGS REMOVED FROM THE PYROMETER-CONTROLLED CAR-TYPE NORMALIZING AND ANNEALING FURNACE. ANNEALING CASTINGS BY "SOAKING" AT RED HEAT ASSURES FINE GRAIN STRUCTURE AND FREEDOM FROM STRAINS, SO ESSENTIAL TO LONG LIFE

EVERY PUMP RECEIVES A COMPLETE RUNNING TEST. EACH FLUID END IS HYDROSTATICALLY TESTED. PERMANENT RECORDS ARE KEPT OF RESULTS

refinery hot-oil pumps, pipe line pumps, and steam engines under the trade name "Erie Ball."

The name "Wilson-Snyder" originated through a partnership, later incorporated, with the first pumps bearing this name built in 1874. Wilson-Snyder's first customers were the local steel mills and as its business expanded its products entered many industries. Impetus was given to its manufacture for the oil business when its pumps were chosen to move 90 per cent of the heavy Mexican crude when those fields were at peak production.



SKILLED CRAFTSMEN ASSEMBLE AND THOROUGHLY TEST EVERY VERTICAL TWIN-CYLINDER ENGINE. ASSEMBLY AND TEST DATA FOR EACH ENGINE ARE FILED IN A RECORD BOOK

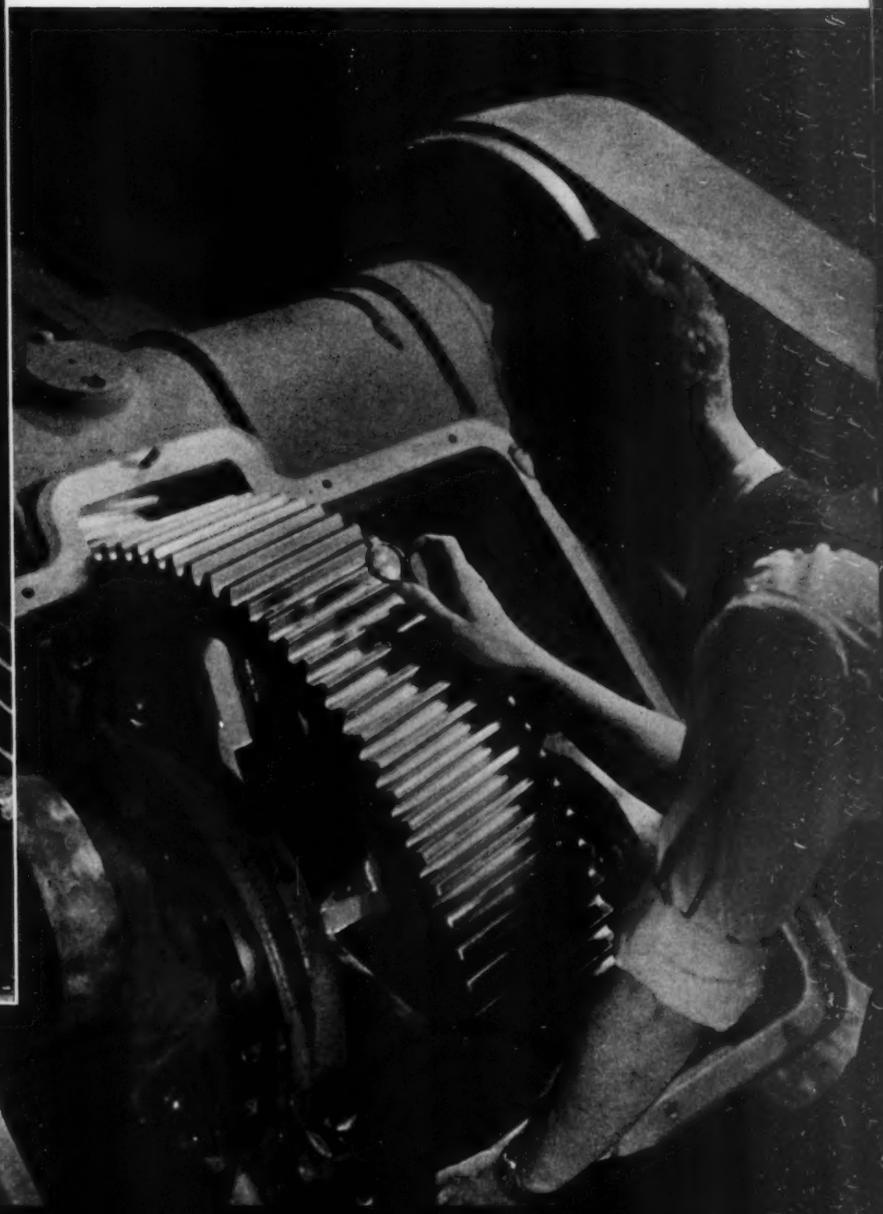
Wilson-Snyder also pioneered in the field of refinery hot-oil pumps, making available many types to meet any need. A

complete line of centrifugal pumps in capacities up to 20,000 gallons per minute and also for high-pressure service was later developed. In 1926 the company pioneered a long stroke slush pump for use on rotary drilling rigs. The first pump had an 18-inch stroke. It proved to be an immediate and outstanding success. Deeper holes and higher pressures necessitated increasing the working pressures of the pumps and progressive engineering introduced many refinements. Today these pumps may be seen operating throughout the rotary fields of United States, Sumatra, Burmah, Rumania, Russia, Iraq, Germany, Trinidad, Venezuela, Argentina, Mexico and Colombia.

The foresight of John Eaton in selecting Oswego as the site for Oilwell's boiler manufacturing plant has been appreciated more forcibly in recent years.

In Oswego it is traditional for the young mechanic to follow the boiler-making trade, and here are to be found skilled craftsmen who display unusual pride in the quality of their workmanship.

The location is strategic as regards securing of raw materials and for rail and ocean shipments of oil-country boilers moving into foreign fields, to Gulf Coast ports, and California through the Panama Canal. The Oilwell plant is located



RECHECKING ASSURES CRAFTSMANSHIP—THE INSPECTOR IS ASCERTAINING THE CORRECTNESS OF TOOTH FORM ON A POWER SLUSH PUMP FOLLOWING A RUNNING TEST

on the Oswego River, where there are valuable water-power rights which make cheap power available. The plant is devoted exclusively to the manufacture of oil-country boilers. In the early days a 15- or 25-horsepower boiler for 100-pound working pressure was considered quite an accomplishment. Today modern oil-country boilers are built for 125-horsepower rating and 350-pound

ARMORING INSIDE SURFACE OF SLUSH PUMP LINERS AGAINST WEAR AND ABRASION. MOLTEN DI-HARD METAL AT 2,200° F. IS CENTRIFUGALLY INLAID AT A SPEED OF 1,500 R.P.M. IN SEAMLESS STEEL FORGING

working pressure. The main boiler shop consists of a building covering 112,000 square feet divided into two bays. The steel plates are received at one end of the shop, carefully laid out by master templates, shaped to size, and drilled in multiple by large heavy-duty radial drills mounted on rails. The plates are then rolled to shape or forged in massive four-post hydraulic presses. Plate up to 1 1/16-inch thickness is handled. The materials are then transferred to the other bay to continue down the fabricating and assembly line to the test block. Here the boilers are subjected to rigid plant inspection after which they are individually tested and certified by New York state and independent insurance inspectors. The large boilers weigh from 15 to 18 tons each.

The analysis of the plate, produced by the Carnegie - Illinois Steel Corp., is carefully checked and registered on each individual plate so that at all times it is possible to identify the chemical and physical properties.

The Oilwell Packer Works was established in Bradford shortly after the discovery of oil in that area. The practical utility of some of the early Oilwell packer designs is proved by the fact that even today the same basic design features are being used. The company originated the idea of hinged slips for hook wall packers. Today this feature is recognized everywhere as the most practical and is the preferred construction. About 450 packers of different types and sizes are made here. The extreme care and control exercised in their construction and assembly accounts for the fact that Oilwell has set this unit aside to operate independently as the manufacturer of a "specialty." The plant itself consists primarily of a

THE PICTURES REPRODUCED ON PAGES 93 TO 106 WERE TAKEN IN THE OIL CITY AND BRADDOCK MANUFACTURING PLANTS OF THE OIL WELL SUPPLY CO. BY JOHNSTON AND JOHNSTON, INC., OF PITTSBURGH, PA.

THE MIRROR-LIKE FINISH AND PRECISION BORE OF ARMORED SLUSH PUMP LINERS ARE ASSURED BY SPECIALLY DESIGNED HONING MACHINES. THE EXTRAORDINARY HARDNESS OF DI-HARD METAL NECESSITATES THE USE OF A NEW COMBINATION OF ABRASIVES

CORROSION FATIGUE, THE ENEMY OF SUCKER RODS, IS BEING COMBATED THROUGH LABORATORY RESEARCH. HERE SUCKER-ROD STEEL IS BEING TESTED AT SLOW SPEEDS UNDER HYDROGEN SULFIDE WELL CONDITIONS

STRUCTURAL STEEL PARTS OF MANY SHAPES AND SIZES ACCURATELY CLAMPED TO A RIGID WELDING JIG ARE KNIT TOGETHER BY THE WELDER

forge shop and a machine shop. The raw materials used in the packers consist of tubular body sections, a special laminated rubber packing and steel fittings to connect the packers to tubing or casing. The body pipes are made from the highest quality, seamless carbon steel or alloy steel tubing or casing.

The Tulsa plant, situated in the heart of the Mid-Continent field, has facilities for the manufacture of specialty items such as seamless steel working barrels, pumping adjusters, tool braces, gas packing clamps, derrick cranes, elevators, Berquist steam hammers, safety hooks, wire rope knives, pulleys, sand pumps, spiders, tubing tongs and bit wagons.

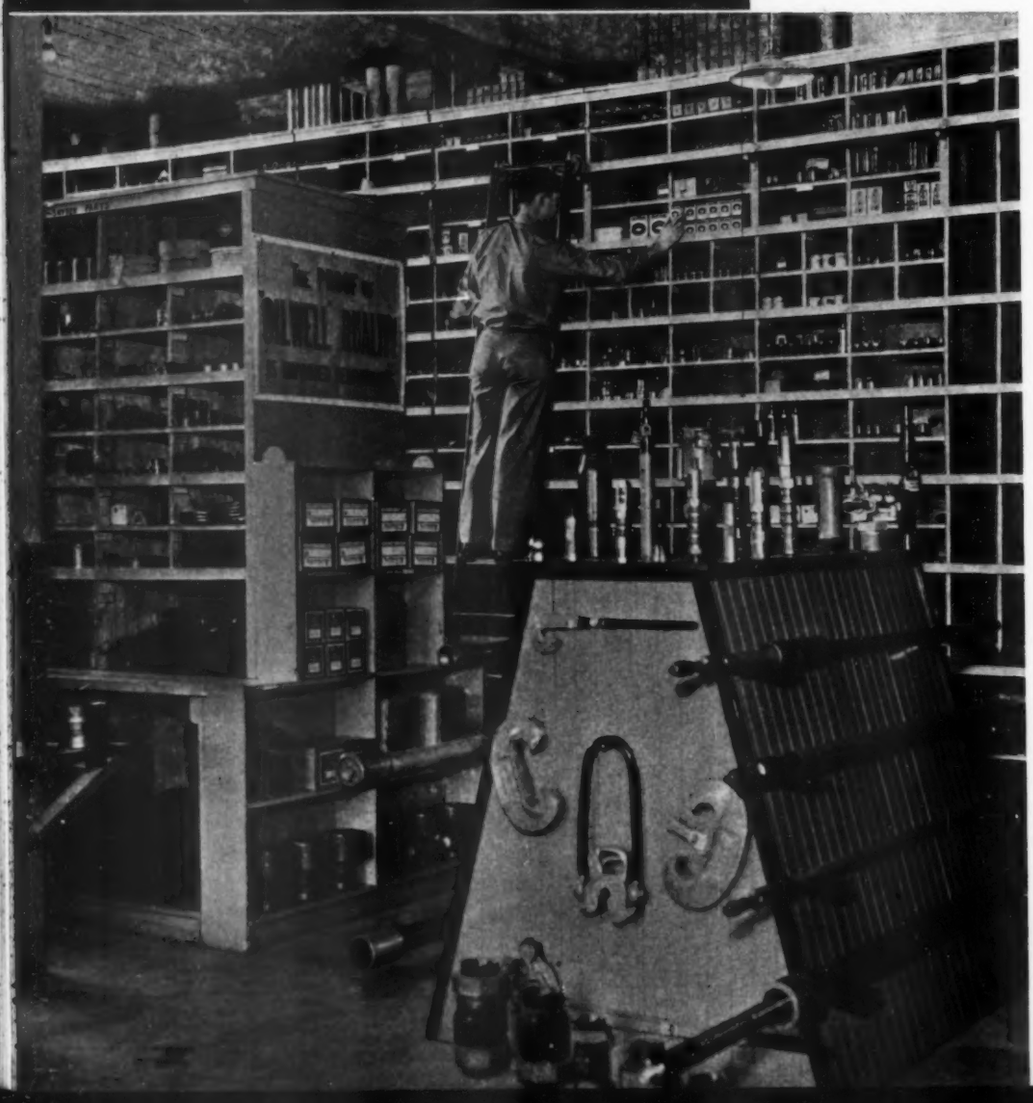
OILWELL IS A PIONEER IN THE MANUFACTURE OF ONE-PIECE SUCKER RODS. PYROMETER-CONTROLLED FURNACES, CORRECT DIE DESIGN, THE LATEST TYPE MACHINERY AND SKILLED OPERATORS ARE ESSENTIAL

The Store

Where would the oil industry be without the field supply store? Oil field activities have always centered about this institution. From the beginning of the oil business, the Oil Well Supply Co.'s stores have been so represented in every important producing district.

As the early operations, which began in Pennsylvania, extended westward, Oilwell followed the trend and today has its branches in every major producing area of this country and it has stores or representatives in many foreign fields. Close in the wake of favorable reports from the geological crews and with the successful completion of a wildcat test as a commercial producer, signalling the discovery of a new pool or oil field, an Oilwell store generally appears at the scene. Differing from almost every other industry, the locating of oil field supply stores presents many difficult problems. In reaching decisions the supply companies share proportionately the risks assumed by the developing companies themselves. The uncertainty regarding the magnitude of the newly discovered pool makes early participation a hazard common to all who enter. Where the new discovery is in or near an established community, the oil field store becomes an integral and busy part of it. More frequently, however, new fields of major importance are found in remote and obscure places. But just as the engineers of the producing and contracting companies successfully cope with and overcome the difficulties resulting from the disadvantages of distant location, so the oil field store finds its way there and lessens the burden of the operators by bringing to them the machinery, equipment and supplies so imperatively needed. In locating its field branches, Oilwell gives careful consideration to the needs of its prospective patrons, deeming

COMPLETE BULLETIN FILES ARE MAINTAINED IN ALL STORES. SALES ENGINEERS ARE PREPARED TO DISCUSS ALL DETAILS OF DESIGN AND PERFORMANCE WITH CUSTOMERS



EVERY SUPPLY STORE MUST CARRY HUNDREDS OF SMALL ITEMS

as a Field Service Unit

mindful of this and loyally endeavor to merit the trust and confidence placed in them. Many branches, by reason of their location, or boom operation requirements, are equipped with living quarters for a number of the employes, thereby providing speedy and efficient 24-hour service, with holidays included. Oilwell provides these facilities as a part of its branch store service and, in addition and supplementary to the store organization, it provides a field staff of trained traveling supply men and sales and service engineers in each district. These men serve not only the regular and emergency needs of the operators but also assist in many other respects; in field machinery service work,

STORES MUST BE EQUIPPED TO HANDLE HEAVY LOADS IN AND OUT

location to their greatest convenience a controlling factor in choosing a store site.

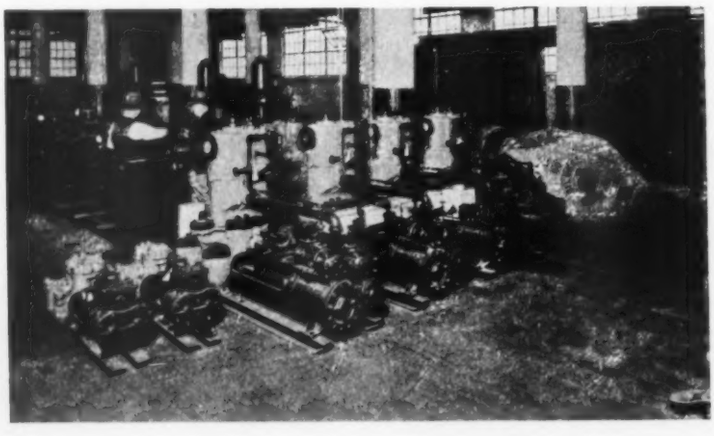
The selection of efficient personnel to man these branches is vitally important. Some of the stores are in distinctly cable tool drilling territory, others are in districts where the rotary drilling method predominates, and still others are located where these two methods are employed separately or in combination. Suitably trained men must be chosen to serve these branches. Many independent operators and others, whose activity is confined to local areas, rarely come in contact with other representatives of a supply company than those located at the field stores. Branch store men consequently bear the responsibility of preserving and enhancing the reputation and good will of the company they represent. They are

SUPPORTING THE MEN IN THE FIELD ARE LARGE WAREHOUSE STOCKS EMBRACING ALL OIL FIELD NEEDS

READY TO SERVE PUMPING NEEDS OF THE EAST TEXAS FIELD

counseling in engineering problems, and in the determination of proper equipment to be used in special cases, as well as in the choice, and proper application and installation, of specific items to assure satisfactory performance.

Conservation and efficiency have become by-words in the oil industry. In keeping with its progressive policy the company anticipated the existing trend toward refinements in field practices and methods leading to conservation. The realization of this aim required the development of equipment of improved design and higher quality to meet the tremendous stresses and increasingly exacting requirements in field usage. These products are distributed to the consuming trade directly through many branches. It is true that great care must be exercised in the selection of store and field representatives, who must be qualified by either extensive prior training or educational preparation, and must be mechanically minded. The mere fact that one may have been a successful salesman, serviceman, or storeman in some other line of endeavor does not necessarily qualify him here. For, as the products become more technical and as field practice becomes more systematized and efficient, the purchaser becomes more discriminating in the selection of his needs and it naturally follows that the store men and the salesman must be qualified to



LARGE STOCKS OF HEAVY MACHINERY MUST BE MAINTAINED AT ACCESSIBLE POINTS

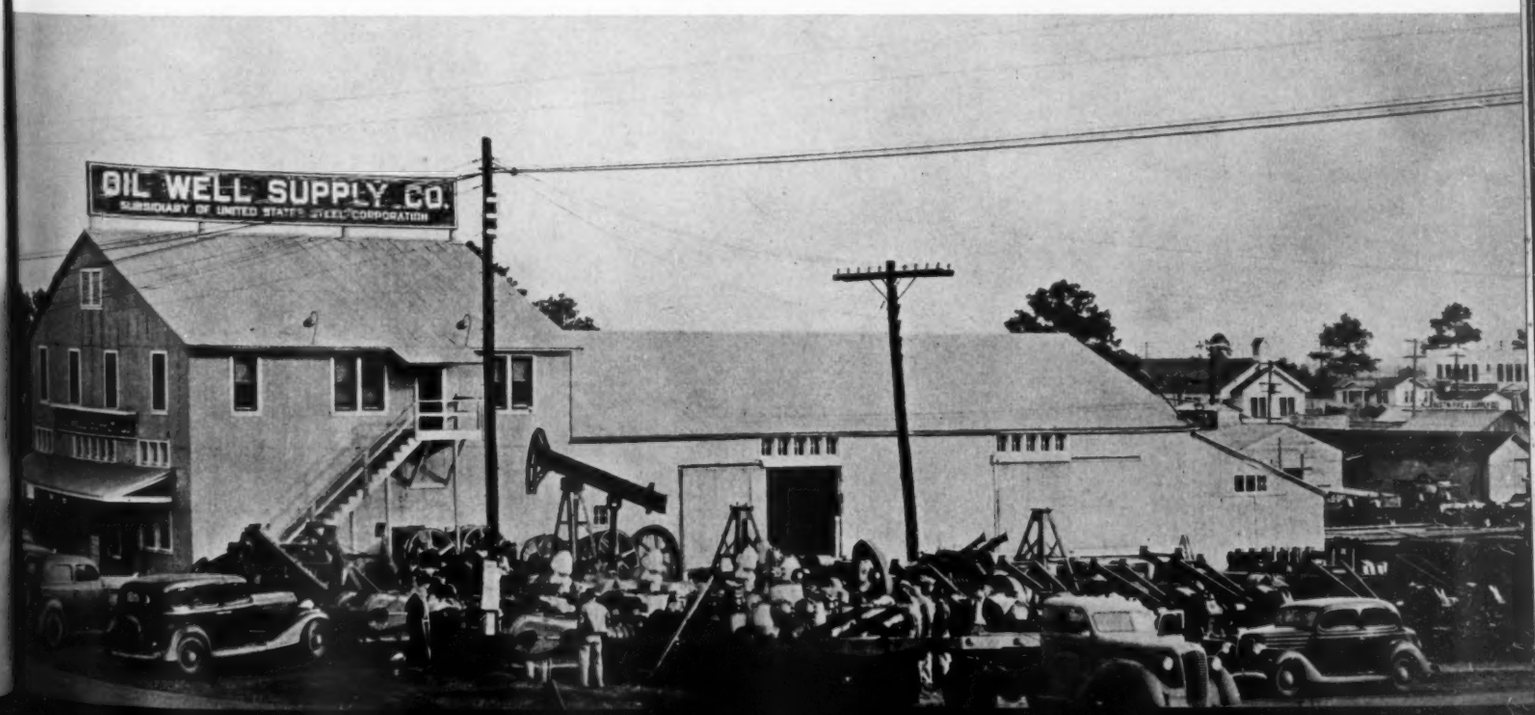
cooperate and function. Since the field stores must in effect be complete units in themselves, it becomes necessary to provide each with suitable stocks of drilling and pumping machinery, well equipment, and miscellaneous supplies required to fill the needs of the operations in the territory served. This requires substantial stocks at each branch. Oilwell being a manufacturer of oil field machinery and equipment, and a distributor of all other items in a completely rounded stock, recognizes the responsibility to service this equipment. To this end, it carries in these field stocks not only an adequate supply of replacement spare parts, for which there is a steady demand in the servicing of the machinery in use, but also many very slow-moving spare parts. These latter items, stocked to meet rare emergencies, represent, in the aggregate, large investments. Profitable returns on them are rare indeed; but, as previously stated, the possible emergency need for them is recognized and provision accordingly made.

THE STORE MANAGER MUST ANTICIPATE EVERY NEED FOR HIS DISTRICT

Any large supply company, especially one with many field branches, striving to serve the needs of every oil field, which requirements vary from field to field, and which frequently change in the same field, faces problems other than the mere providing and selling of merchandise. Among other hazards is the devastating factor known as obsolesence. As drilling operations are being conducted to greater and greater depths, requiring constant and frequent changes and improvements in the design and efficiency of drilling machinery, in well equipment, and in pumping machinery, and also as field practices themselves are changed, the manufacturer and distributor of oil field equipment must anticipate future specifications. In this process, it is inevitable that portions of the inventories will become antiquated if not entirely obsolete, and losses naturally result. Every business has its problems and these are worries of the supply companies.

In the evolutionary development of oil field machinery, the supply company field engineers and the cooperating engineers and superintendents of the oil companies play important parts. It is in the field that the need of new and improved machinery and methods is conceived. It is there that the new product is tested and subjected to actual operating conditions, impossible to duplicate elsewhere, and finally brought to relative perfection. The importance of this field relationship is universally recognized and is closely associated with the work of the headquarters engineering staff in the designing and development of its manu-

THE WIDELY DIVERSIFIED MATERIAL REQUIREMENTS OF DRILLING FOR AND PRODUCING OIL ARE SHOWN AT A TYPICAL EAST TEXAS STORE POINT



General Office and Typical Field

CALIFORNIA DIVISION

Avenal
Bakersfield
Goleta
Huntington Beach
Long Beach
Los Angeles
El Segundo
Santa Maria
Taft
Ventura

EASTERN DIVISION

ILLINOIS

Bridgeport
Chicago

KENTUCKY

Irvine
Pikeville
Owensboro

MICHIGAN

Muskegon
Mt. Pleasant
West Branch

NEW YORK

New York City
Bolivar

OHIO

Columbus
Lima
Logan
Marietta
Newark
Wooster

PENNSYLVANIA

Bradford
Butler
Clintonville
Coudersport
Franklin
Oil City
Pittsburgh
Washington
Westfield

WEST VIRGINIA

Cairo
Charleston
Clarksburg
Parkersburg

MIDWEST DIVISION

ARKANSAS

ElDorado

CANADA

Calgary, Alberta
Okotoks, Alberta

KANSAS

Eldorado
Ellinwood
Hutchinson
McPherson
Russell
Wichita

COLORADO

Denver

Stores of Oil Well Supply Company

OIL WELL SUPPLY CO
OIL WELL SUPPLY COMPANY
OIL WELL SUPPLY COMPANY
OIL WELL SUPPLY COMPANY
OIL WELL SUPPLY COMPANY
OIL WELL SUPPLY COMPANY

LOUISIANA

Jennings
Rodessa
Shreveport
Thibodaux

MONTANA

Cut Bank
Kevin

NEW MEXICO

Hobbs

OKLAHOMA

Ada
Bartlesville
Blackwell
Bristow
Cushing
Duncan
Fairfax
Oklahoma City
Ponca City
Seminole
Tulsa
Wewoka

TEXAS

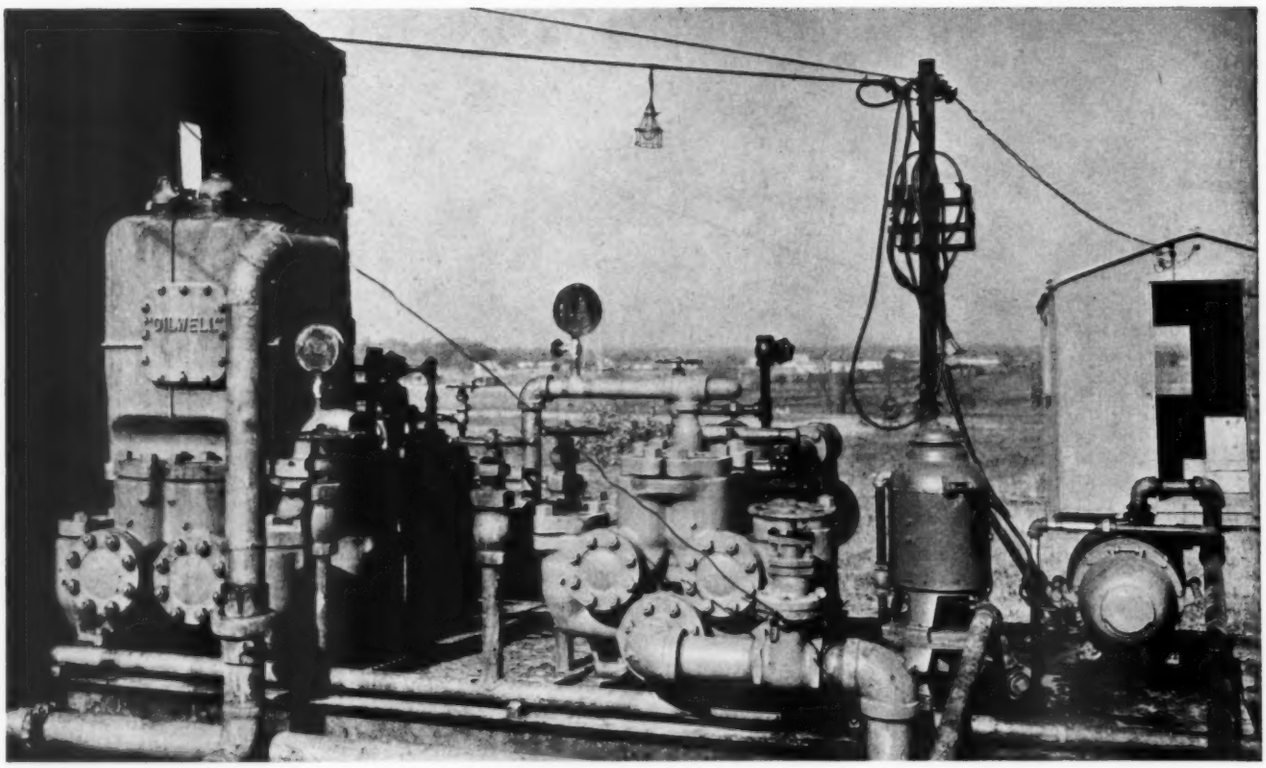
Albany
Beaumont
Big Spring
Borger
Breckenridge
Corpus Christi
Dallas
Electra
Fort Worth
Freer
Houston
Kermit
Kilgore
Luling
McCamey
Mirando City
Monahans
Odessa
Olney
Pampa
Pettus
Talco
Wichita Falls
Willow Springs

WYOMING

Casper
Lovell
Lusk

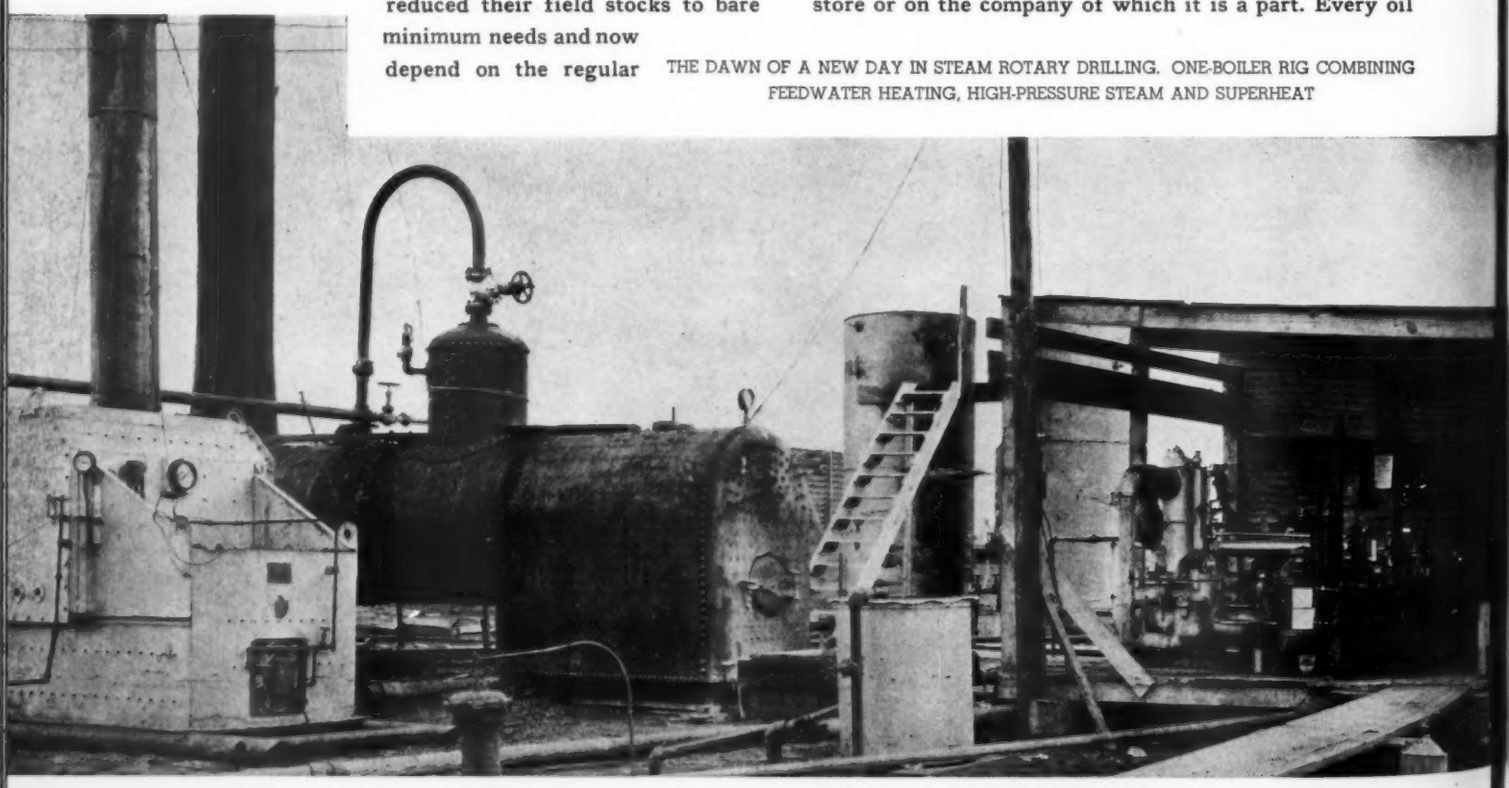
EXPORT DIVISION

New York City, New York
Buenos Aires, Argentina
Hannover, Germany
London, England
Maracaibo, Venezuela
Ploesti, Rumania
San Fernando, Trinidad
Tampico, Mexico
Milan, Italy

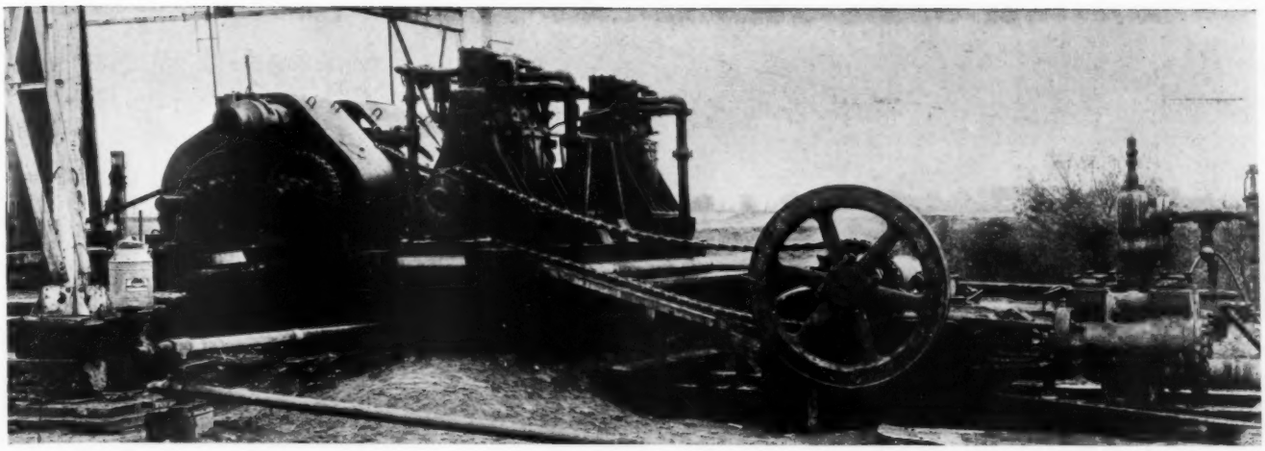


UNITIZED BOILER-FEEDING EQUIPMENT PROVIDES MAXIMUM PORTABILITY. EXHAUST-STEAM FEEDWATER HEATER ON LEFT SUPPLIES PREHEATED FEEDWATER

factured products. Some years ago, conditions mainly of this character caused large producing oil companies and oil field contractors to discontinue carrying extensive warehouse stocks of their own. They have accordingly reduced their field stocks to bare minimum needs and now depend on the regular supply stores for their day-to-day demands. The supplying of such needs being the natural function of the field supply store, this change in buying policy was welcomed by the suppliers and they made adequate provision to meet the increased responsibility. Another obligation rests on the oil field store or on the company of which it is a part. Every oil



THE DAWN OF A NEW DAY IN STEAM ROTARY DRILLING. ONE-BOILER RIG COMBINING FEEDWATER HEATING, HIGH-PRESSURE STEAM AND SUPERHEAT

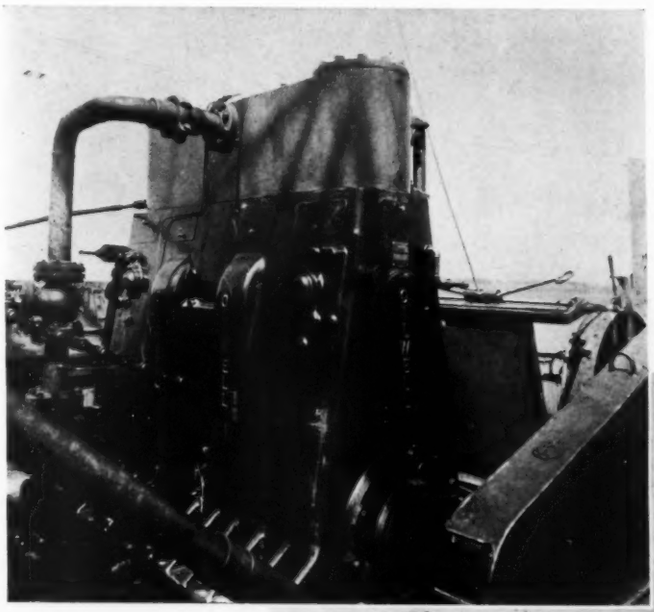


ECONOMY AND PORTABILITY IN HEAVY DUTY DRILLING—THE DOUBLE STEAM ENGINE DRIVE ARRANGEMENT SHOWN

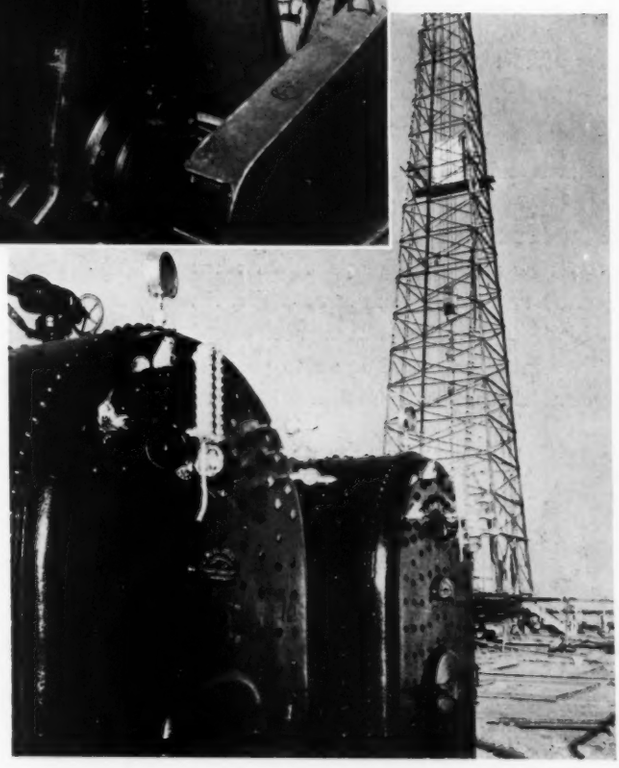
field, whether of boom character or of slow development, sooner or later reaches the completely-drilled-up stage and all wells are finally standardized for pumping. It is then that they settle down to the single problem of producing. Since much of the machinery and equipment in use there requires continued servicing, the oil field supply store often remains on location long after profitable business has ceased.

The oil field supply store is indeed an institution, inseparable from the oil industry. It is the oil workers' rendezvous. It has its social aspects which are worthy of attention. It is there that the oil field worker, in all branches of activity, arranges to meet his friends. It is there that he establishes his post office and calls for his mail. It is there that even an employment agency of sorts is informally established, for quite frequently those who are in need of men enlist the services of the supply man to find suitable help, and conversely those out of work use the friendship of the supply house in seeking employment. It is at the supply store also that those who have grown old in oil country service and have retired, meet with their cronies and, like sailors ashore, swap yarns. Many wells are redrilled and old scenes re-enacted by these old-timers around the stoves in the supply houses.

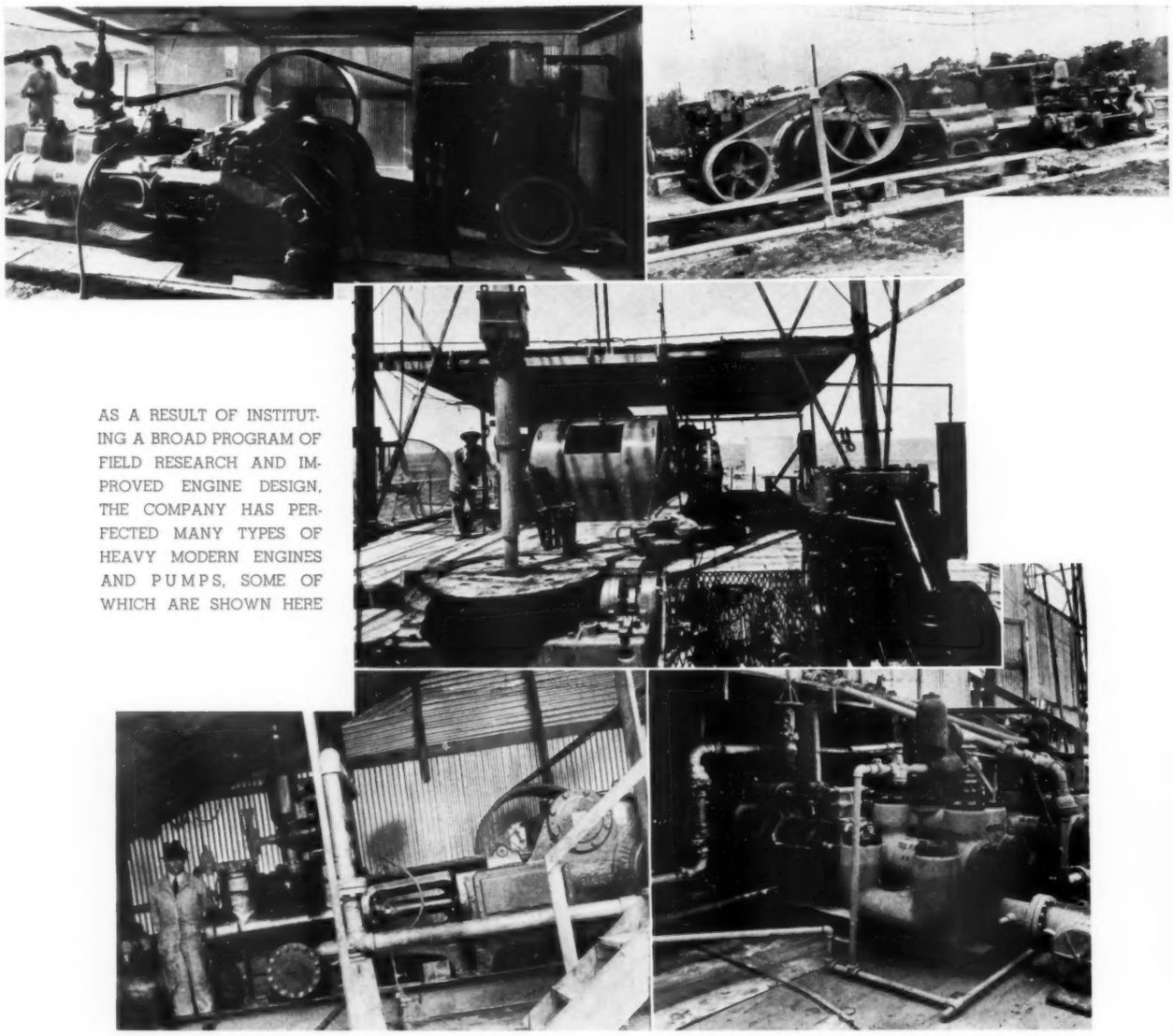
The supply stores in various areas are manned by workers whose loyalty and fidelity are unsurpassed, whose energy is untiring, and whose good cheer is traditional. They are sportsman-like and unmindful, in many cases, of the lack of those accommodations which would supply pleasant diversions in their truly frontier life. Their ambition and desire is to serve well and they get the job done. The practical



THIS TWIN VERTICAL DUAL DRIVE ENGINE HANDLES HOISTING, ROTARY, AND CORE REEL DRIVES ECONOMICALLY BY VIRTUE OF CUT-OFF CONTROL



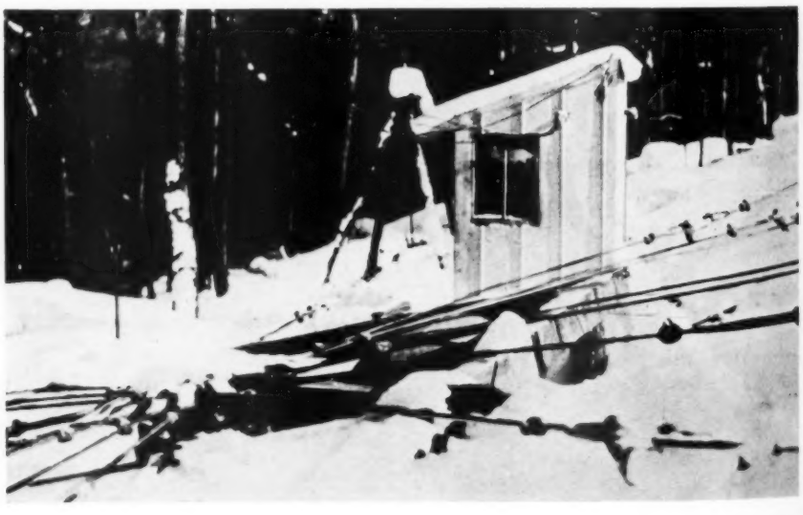
AN EFFICIENT HIGH-PRESSURE TWO-BOILER SET-UP IS BECOMING A COMMON SIGHT IN THE OIL COUNTRY WHEN STEAM SAVING MACHINERY IS USED. STORES IN ACTIVE POINTS MUST CARRY LARGE STOCKS OF BOILERS TO SUPPLY IMMEDIATE DEMANDS



AS A RESULT OF INSTITUTING A BROAD PROGRAM OF FIELD RESEARCH AND IMPROVED ENGINE DESIGN, THE COMPANY HAS PERFECTED MANY TYPES OF HEAVY MODERN ENGINES AND PUMPS, SOME OF WHICH ARE SHOWN HERE

need of the oil field supply store is assured and its human and social side surely cannot be overemphasized.

In the same spirit, the Oilwell staff of engineers and field research men tackles any new and difficult problems when called upon by the store manager. As deeper oil-bearing strata are tested these men are called upon to suggest means of meeting these demands either through the design of heavier and more specialized equipment or through adopting some new and radically different type of tool. In either case, the store manager, the engineer and other personnel of Oilwell are brought into the problem to find a practicable and quick solution to meet the requirements of the oil producers.



IN THE DEAD OF WINTER AT SUB-ZERO TEMPERATURES GEARED POWERS HAVE PROVEN THEIR WORTH YEAR AFTER YEAR. A PENNSYLVANIA HILLSIDE OILWELL INSTALLATION

THE HIGH EFFICIENCY AND COMPACTNESS OF GEARED PUMPING POWERS MEAN LOWER LIFTING COSTS THEY ARE BEING WIDELY ADOPTED AND INSTALLED WITHOUT HOUSING AS THE ONE SHOWN HERE

PUMPING UNITS CAN BE INSTALLED IN RECORD TIME. UNITS LIKE THE ONE ILLUSTRATED HAVE BEEN COMPLETELY SET UP AND STARTED PUMPING WITHIN FORTY-EIGHT HOURS

THE SUPPLY SALESMAN MUST MAINTAIN CONSTANT CONTACT BETWEEN FIELD AND STORE TO RENDER THE MAXIMUM OF SERVICE DAY OR NIGHT. HE MUST BE QUICK TO RECOGNIZE SPECIAL NEEDS OF HIS TERRITORY AND TO SUGGEST IMPROVEMENTS IN EQUIPMENT AND PRACTICES

PACKING SMALL PARTS FOR SHIPMENT TO THE FOUR CORNERS OF THE WORLD

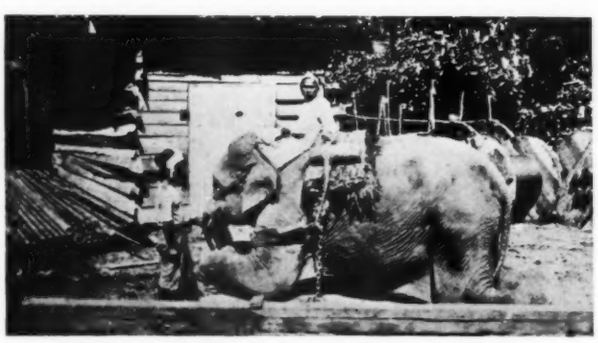
Oilwell Abroad

Delving into the early annals of oil, one finds recorded that in 1879 "James R. Adams, with a crew of competent drillers and three complete Oilwell outfits, has gone to Russia to fill a contract for drilling wells on the shore of the Caspian Sea for Ludwig Nobel."

Nothing in this scrap of history seems to link it with 1937 or with names which have won renown or even with Oilwell. Let's see.

The "crew of competent drillers," investigation shows, was composed of Girard Frank, Tom Conway, Will Downing, A. E. Culbertson and John Benninger. These trained men, with Adams himself, were provided by the Oil Well Supply Co. So were the "three complete Oilwell outfits," for the company's export business was already on its way.

When the Nobel drilling contract had been completed, Culbertson, instead of sailing for the United States with the others, remained in Russia where he was joined by his brother, Orie Culbertson. The two men further introduced American methods of drilling, instructed Russians in oil field work, and extended the fame of Oilwell tools. Orie Culbertson died in Russia in 1919. It was 19 years before A. E. Culbertson saw



PREPARING TO MOVE OIL FIELD EQUIPMENT IN BURMA

his native Pennsylvania again. Then, after a brief visit, he returned to Russia, acquired properties and wealth, and remained there for a total residence of 39 years. He married a Russian girl, Xenia Rogozny, and they reared three boys.

One of those boys is Ely Culbertson, who has taught the world how to play contract bridge. One is Alexander (Sasha) Culbertson, noted violinist who played for the American troops in France and who is now on a concert tour of this country. The third, Eugene Culbertson, is in a French hospital, still suffering from wounds received while serving in the French heavy artillery in the World War.

MOVING A WILSON-SNYDER SLUSH PUMP IN THE DUTCH EAST INDIES

The Culbertson family escaped from Russia during the bloody revolution in 1918.

More of interest: Adams wrote from Baku, Russia, that the Nobel refineries "buy a great many old oil barrels," and he saw one marked "Imperial, Oil City, Pa." The company's big Imperial Works in Oil City stands today on the site of that same Imperial refinery.

It was inevitable that wherever petroleum was sought, Oilwell should also go. Examination of the company's export business reveals the same sure progress that has marked its history in the United States, but with this difference in the manner of early growth: In the home country Oilwell kept constantly at the oil industry's elbow, anticipating its needs and bending its efforts to the solution of the unending train of engineering problems as fast as they arose. The company was the oil man's guide, counselor and friend. So it was also to the oil man in other lands and even more emphatically; but at the outset it could not drop into step with him in the same swift, intimate way because it was impossible to know in what remote country, desert, or jungle oil was next to be sought.

After the Drake well had crudely demonstrated how to get oil from the ground, prospecting companies were organized in various parts of the world; but there was little or no publicity attending such enterprises, and those most deeply interested in them usually knew nothing about drilling methods or equipment. Often the first intimation the company had of a foreign drilling project was an inquiry concerning the mechanical outfit required or the unheralded appearance of an agent of the new company. In other words, instead of Oilwell's seeking the prospective customer, the prospect sought Oilwell crossing the ocean to tap this pioneer source of mechanical supplies and vital information.

The company frequently received letters stating in substance: "Please quote us a price on machinery and tools needed to drill a well 1,200 feet deep." Although $10,000 was the minimum cost of a primitive outfit in those early days, the inquirer was unable to specify more definitely what he needed. This lack of knowledge concerning a new industry imposed on Oilwell not only the obligation of supplying the right kind of equipment, but of charging an honest price for it. The evidence that the company faithfully discharged this double responsibility is found in the fact that nineteenth-century over-

W. P. LASETER
Manager
Tampico, Mexico

ASHLEY CARTER
Manager
London, England

C. T. LONGCROFT
Sales
London, England

R. L. CROOK
Sales
Maracaibo, Venezuela

S. M. DECKER
Sales
Trinidad, B.W.I.

W. W. ANDERSON
Export Representative
Oil City, Pa.

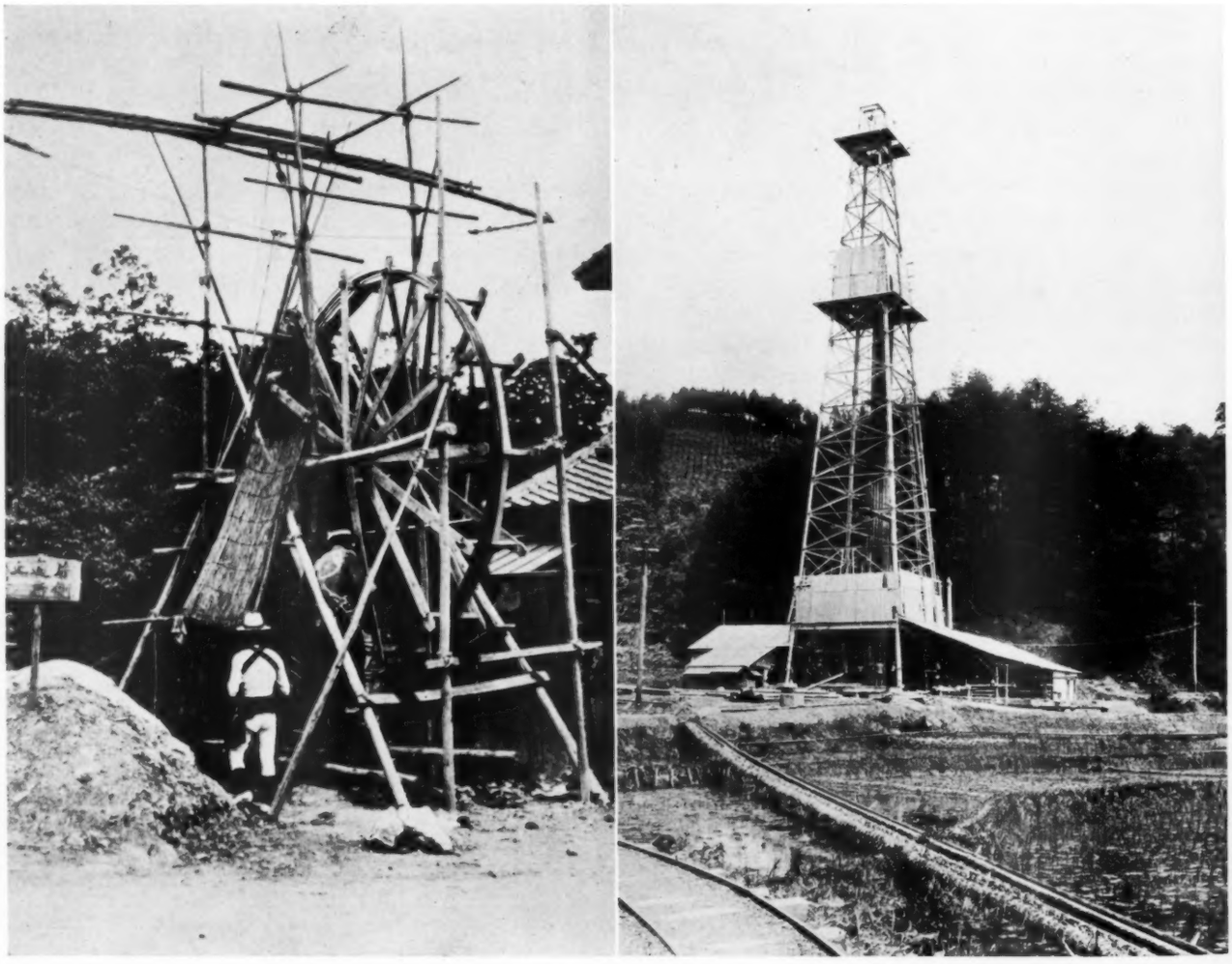
seas customers, who were compelled to rely upon the efficiency and fairness of the supply company, remain Oilwell customers today, some of them having continued this business relationship for more than half a century.

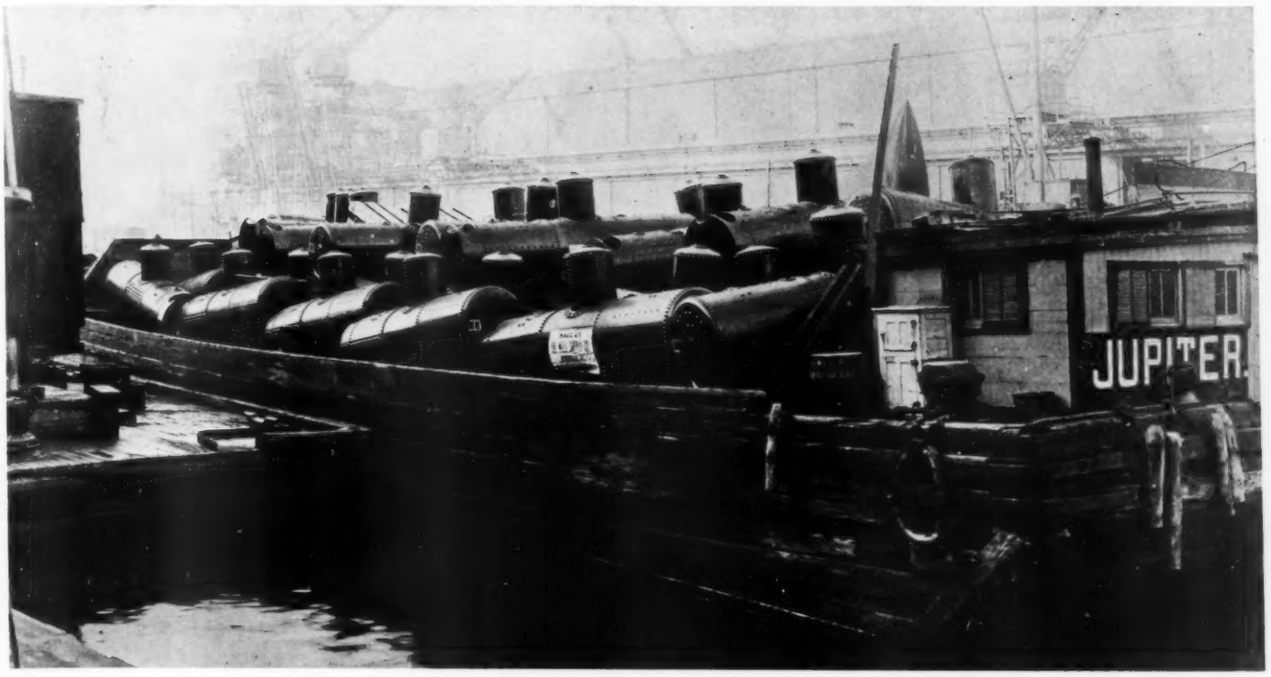
"Particular attention paid to foreign orders" is the way the organization's newspaper advertisements of 1882 alluded to this branch of its trade. Already it was sending oil field equipment to Australia, Austria, Cuba, Central America, Germany, Hungary, India, Italy, Mexico, Rumania and Russia. No record remains to tell just when the first exports were made, but they are known to have begun almost as soon as prospecting in these distant lands commenced.

It was common practice for oil pioneers in foreign territory not only to appeal for counsel, but to ask Oilwell to provide experienced men to do the actual work of drilling wildcat wells. The custom gave rise to an important phase to the company's business, already indicated in the narrative concerning men and machinery provided for Ludwig Nobel in Russia. The company has aided thousands of drillers, tool-dressers, rig-builders, pipe line workers, machinists, and refinery men to secure work on foreign soil. This often created still another responsibility for Oilwell, that of keeping a paternal eye on wives and children left behind. Ordinarily these workmen signed three-year contracts. If a husband failed to send remittances on time, Oilwell was asked by an anxious wife to investigate. If expected letters did not come, Oilwell was implored to find out if sickness, perhaps death, was the reason.

Except for trips to Russia and Rumania by John Eaton, the founder and president, and to different parts of Europe by John McCrum, who handled much of the foreign business from the Bradford, Pa., office, Oilwell sent no representatives overseas until 1900. In that year Louis C. Sands, who later became vice president and general manager, went to Paris with equipment and a four-man crew to drill an artesian water well on the grounds of the Paris Exposition. A flowing well, 1,950 feet deep, was drilled in 35 days. The French record up to that time for a hole of that depth was three years. In 1910 W. W. Anderson became export manager and during his 20-year tenure the export business experienced its greatest expansion. To Oilwell fell the opportunity to be of large service

THE OLD AND THE NEW IN JAPAN, THE LATTER BEING A MODERN OILWELL RIG





LIGHTERING PART OF A SHIPMENT OF FIFTY OILWELL BOILERS FOR A CUSTOMER IN SOUTH AMERICA

in the World War through its London office, established in 1910, with M. A. Ockenden in charge. The growing problem of a water supply for the American soldiers in France in 1917 was discussed with Mr. Ockenden, who, after consultation with the United States embassy in London, conferred with General Pershing's headquarters in Paris. Specifications were drafted, not only for drilling machinery but for everything needed in putting the water supply in actual operation, including even the drinking cups. The war office adopted these specifications as standard. Oilwell was awarded the contract for all of the drilling equipment. The first order was for 30 outfits. Oil developments in Mexico led the company to establish a branch in Tampico in 1914 in charge of W. H. Whittekin, now vice president, who remained there until 1917, when he went to France as a member of the A.E.F.

Oilwell's foreign activities were widened in 1922 when Ashley Carter, present manager of the London office, toured most of the world's important oil fields. Branches were established in Trinidad, Canada and Rumania. In the meantime oil operations in South America were expanding. Paul Newcomb, J. E. Goble and Fred Coats were at different times sent to that continent, with Colombia, Venezuela and Trinidad as their special fields. About the same time B. G. Flick became the company's representative in Argentina, Ecuador and Peru. The late C. J. Anderson, who already had covered the more important oil regions of South America, was commissioned to visit and study those in the rest of the world. The company was thus acquiring first-hand knowledge of conditions and needs in the oil fields of all lands. This policy has been pursued without interruption, so that today the operator in the most distant area has relatively little difficulty in procuring any piece of equipment required to meet his most exacting needs.

Not infrequently the pioneers in foreign territory laid perplexing engineering problems in Oilwell's lap. The company has always encouraged that practice. One wildcatter wanted to drill near Lake Titicaca, 12,000 feet above sea level, in Bolivia, and the only way of getting equipment to the site was on the backs of burros. The maximum load for each of these surefooted little animals was 250 pounds. Could the thing be done? Oilwell said it could, and it was. A complete drilling outfit was carried from the railhead to the location by building the heavier pieces in sections and then assembling them at the well site. Boiler, engine and tools went that way. Most of the assembling was done with bolts. The auger-stem, however, was made in short, coupled sections. The pieces were fastened together in box-and-pin fashion.

Oilwell now has branch houses or representatives at several strategic foreign points in addition to its main foreign office in London. Modern methods of communication and transportation have brought the driller of a test well in a South American jungle closer to Oilwell, in point of time and service, than was the wildcat operator in the hills of West Virginia when the company was in its infancy. It is now possible to communicate with a customer in a remote sector of the earth within a few hours at most. Whether he needs engineering counsel or an engine, it is promptly available. A great supply company has become a neighbor and ally.

Oilwell Has Kept Faith

PROOF THAT OILWELL HAS KEPT THE FAITH OF ITS ILLUSTRIOUS FOUNDER IS SEEN IN A COMPARISON OF THE DRAKE RIG WITH PRESENT-DAY OILWELL EQUIPMENT.

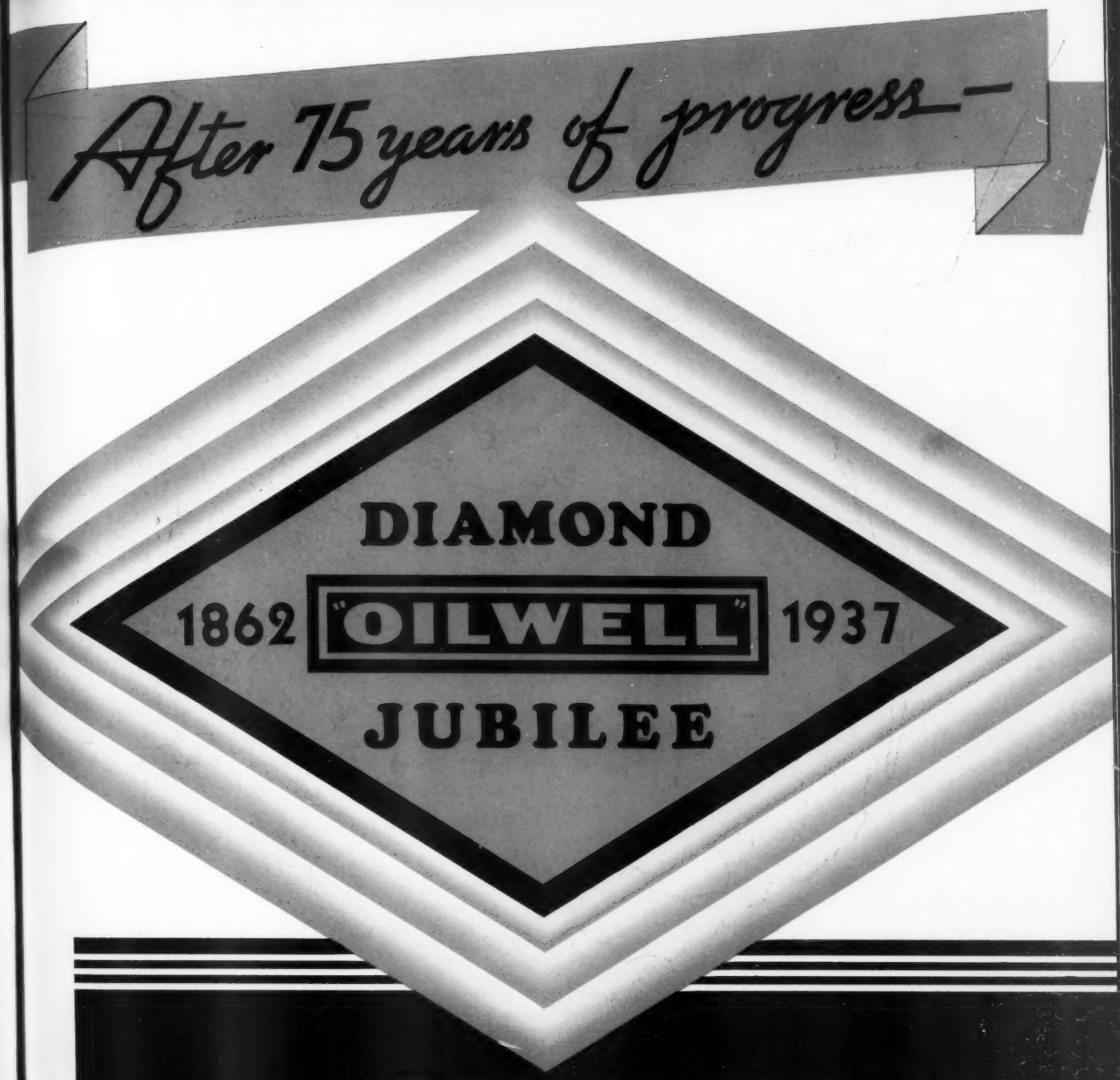
	THE DRAKE WELL	THE 1937 DEEP WELL
DEPTH	*70 FEET*	*7,500 TO 12,500 FEET*
FOOTAGE DRILLED PER DAY	*3 FEET*	*UP TO 1,500 FEET*
HEIGHT OF DERRICK	*30 FEET*	*122 TO 160 FEET*
WT. OF DERRICK AND EQUIP.	*10 TONS*	*350 TONS*
WEIGHT OF WELL CASING	*½ TON*	*250 TONS*
WELL PRESSURE (BOTTOM-HOLE)	*10 LBS. (EST.)*	*5,000 TO 10,000 LBS. PER SQ. IN.*

IN THE EARLY DAYS OF THE INDUSTRY, OILWELL INVENTED COUNTLESS TOOLS AND DEVICES TO PROMOTE DRILLING PROGRESS. IN LATER YEARS IT PIONEERED OR WAS DEFINITELY IDENTIFIED IN THE DEVELOPMENT OF THE FOLLOWING:

THE GEARED POWER AND GEARED PUMPING UNIT; OIL-FIELD BOILERS WITH ARCHED CROWN SHEET AND CROWNED DOME; OIL-BATH ROTARY SWIVEL; MAKE-AND-BREAK ROTARY; ROTARY WITH ONE-PIECE BASE; TRIP TONG FOR MAKE-AND-BREAK ROTARY; TWIN-CYLINDER STEAM ENGINE WITH ONE-PIECE FRAME; BANDWHEEL POWER WITH ROLLER BEARINGS; HEAT-TREATED DRILLING JARS; UPSET-END SUCKER RODS AND ALSO FULLY HEAT-TREATED SUCKER RODS AND PULL RODS; DIFFERENTIAL DRILLING DRIVE; TWIN-CYLINDER VERTICAL STEAM-DRILLING ENGINE; ROTARY DRILLING UNIT COMPRISING TWIN-CYLINDER ENGINE AND ROTARY; BOILER FEED WATER HEATER PUMP UNIT; OILWELL-BRANTLY DRILLING CONTROL.

MANY OF THESE IMPROVEMENTS WERE DEVELOPED UNDER THE GUIDANCE OF EDGAR E. GREVE, CHIEF ENGINEER FOR MANY YEARS UNTIL HIS RECENT ILLNESS. SINCE 1930 ENGINEERING AND DEVELOPMENT HAVE BEEN CARRIED ON UNDER THE DIRECTION OF JOHN M. SHIMER, VICE PRESIDENT.

TO AFFORD SOME IDEA OF RECENT PROGRESS IT MAY BE NOTED THAT IN THE PAST FIVE YEARS, SOME 250 INDIVIDUAL ENGINEERING DESIGNS HAVE BEEN INTRODUCED. IN THESE DEVELOPMENTS OILWELL GRATEFULLY ACKNOWLEDGES THE AID OF THE MANY OPERATORS, ENGINEERS, DRILLERS AND OTHER OIL MEN WHO ASSISTED IN MAKING THESE IMPROVEMENTS POSSIBLE.



OIL WELL SUPPLY COMPANY

extends greetings and thanks to the huge industry which helped it grow

3 years after Drake...

"OILWELL" STARTS GLOBE

OIL-PRODUCING COUNTRIES OF THE WORLD

1. Canada
2. United States
3. Mexico
4. Trinidad
5. Venezuela
6. Colombia
7. Ecuador
8. Peru
9. Argentina
10. France
11. Germany
12. Czechoslovakia
13. Poland
14. Roumania
15. Russia
16. Italy
17. Egypt
18. Iraq
19. Persia
20. India
21. Sakhalin, Russia
22. Japan and Taiwan
23. Dutch East Indies
24. Sarawak, British Borneo

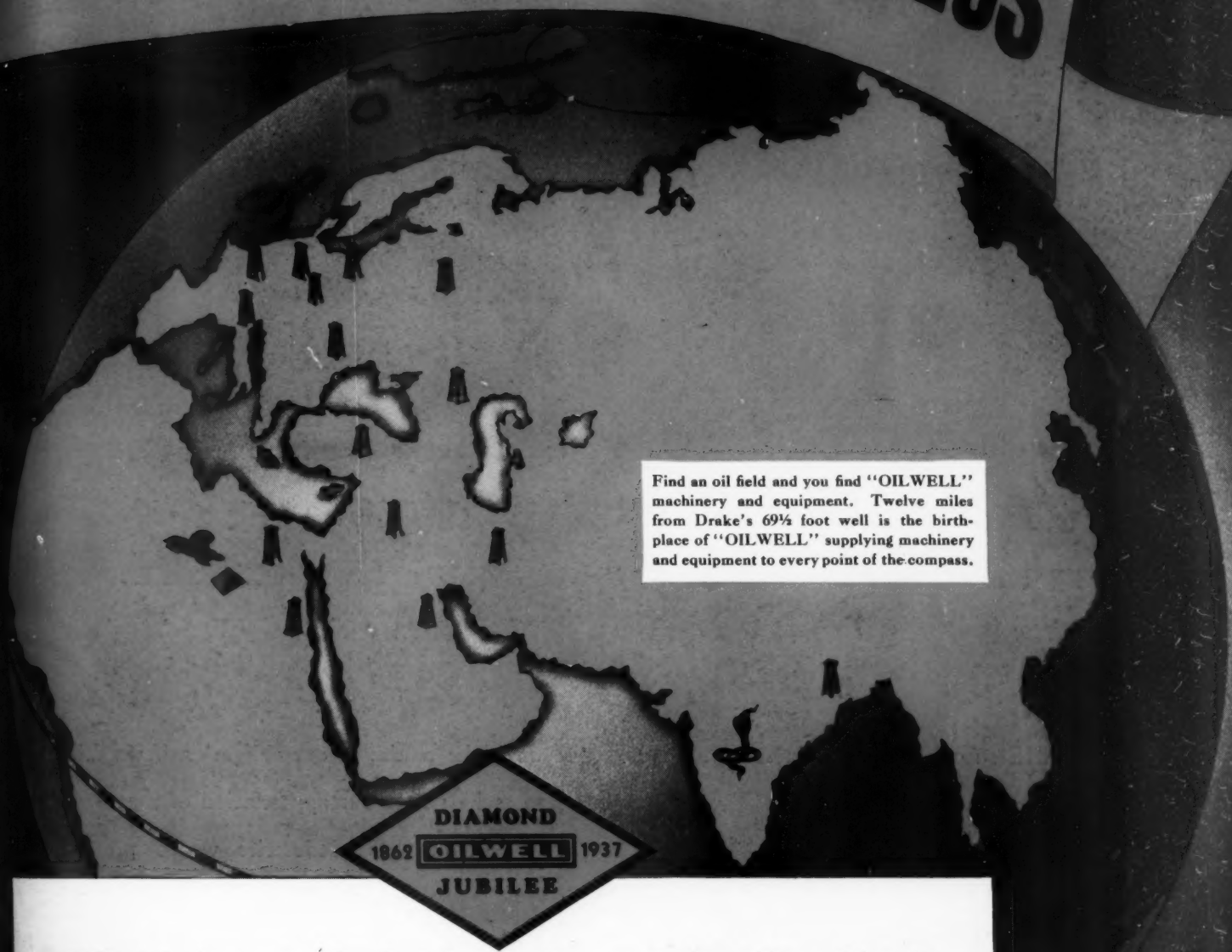
Data courtesy of American Petroleum Institute

THE WORLD'S

Most Progressive and Oldest

SUPPLY COMPANY

BIRDLING SUPPLY BUSINESS

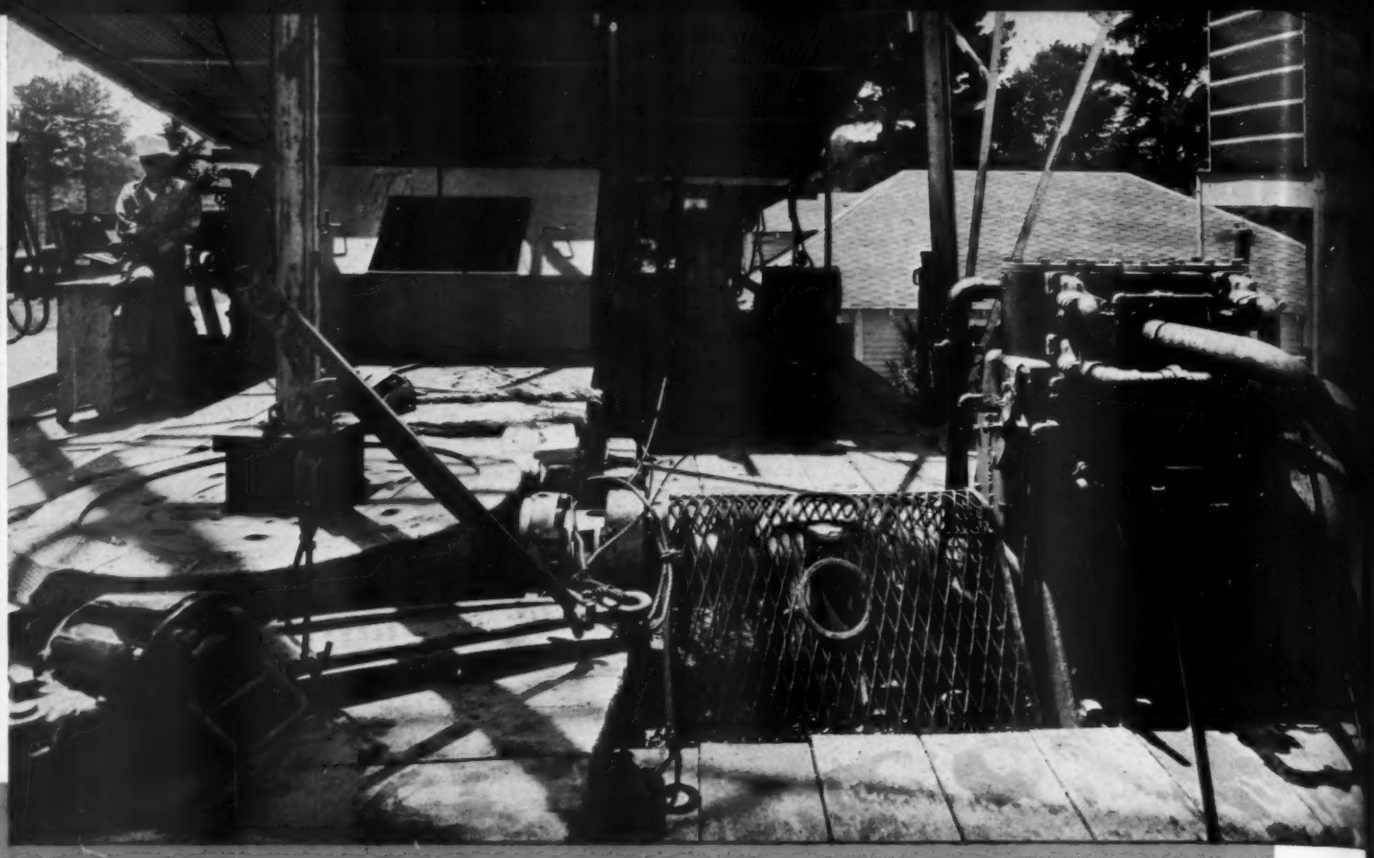


Find an oil field and you find "OILWELL" machinery and equipment. Twelve miles from Drake's 69½ foot well is the birthplace of "OILWELL" supplying machinery and equipment to every point of the compass.

IN 1862, three years after Drake's great discovery, flowing gold was firing the minds and ambitions of men everywhere. John Eaton, a true pioneer and founder of the Oil Well Supply Company, foresaw a huge business built on service to the infant petroleum industry. He followed the pioneer's trail of many hardships and penetrated the wilderness to serve a rapidly growing and expanding industry.

From such origin grew the Oil Well Supply Company—still young in spirit but old in service and experience—a virile, vital force in the economic development of machinery and methods to facilitate the drilling for and production of oil and gas at less cost.

To set the pace throughout seventy-five years calls for foresight, courage, and leadership. These qualities characterize the "OILWELL" organization. They explain the world wide acceptance of "OILWELL" machinery and equipment—used everywhere with confidence and satisfaction.



An Acknowledgment

THE success of any business institution is measured by the service it gives. That service is possible only where there is complete coordination within its own ranks as well as with the suppliers of products with whom it works.

On this occasion of our celebration of seventy-five years of service to the oil industry, we would be remiss in our obligation if we failed to make public our appreciation of the cordial support of those industries whose products have contributed to the position we hold in this field.

Their allegiance to the standards we have set for ourselves, has contributed greatly to the success of . . . . .

OIL WELL SUPPLY COMPANY

Subsidiary of United States Steel Corporation

Branch Stores in All Oil Fields

"OILWELL"

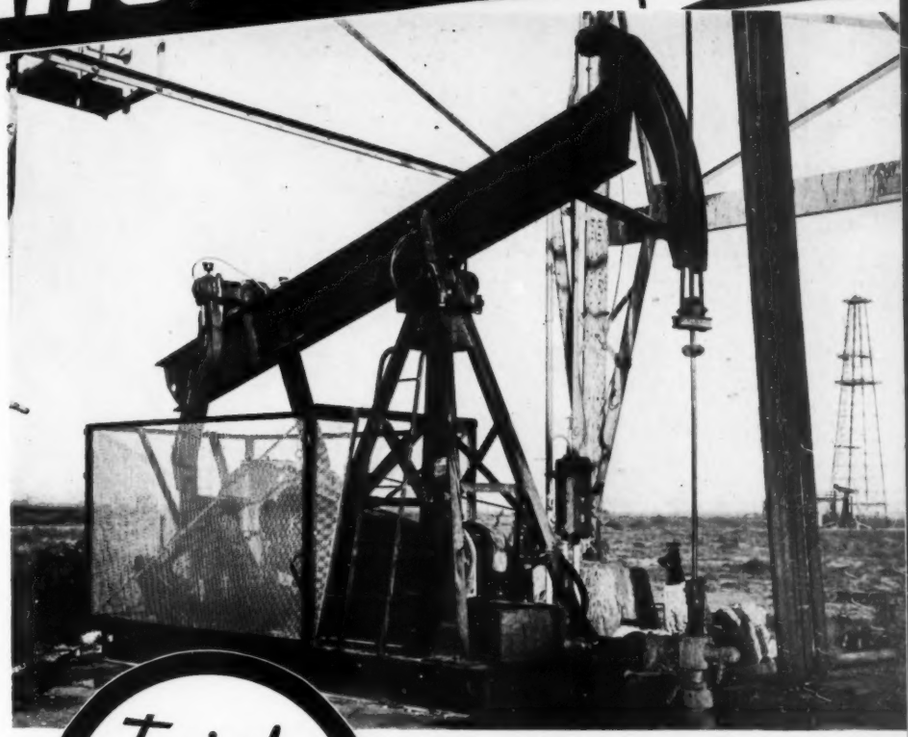
WESTINGHOUSE *Salutes* "OILWELL" ON THE COMPLETION OF 75 YEARS' SERVICE

● Outstanding success such as Oilwell Supply Company has enjoyed is not alone the result of highly efficient supply service. For three quarters of a century, "OILWELL" has anticipated the amazing growth of the Petroleum Industry . . . constantly working with associated manufacturers for the development of new ideas and new equipment to meet the exacting requirements of progressive Petroleum Engineers.

To Westinghouse, with fifty-one successful years of electrical service to all industries, it is a source of great satisfaction to have been so long associated with "OILWELL" in serving one of America's greatest basic industries. Among developments in which Westinghouse has taken a leading part are the Hild differential drive for rotary drilling, Diesel-electric drilling equipment, Westinghouse-Nuttall drives for oil well pumping, weather-proof motors and supervisory control for pipe line pumping.

Illustrated on this page are a few typical examples of the hundreds of "Oilwell"-Westinghouse installations at work today throughout the Petroleum Industry.

Westinghouse looks forward with pleasure to continued association with Oilwell Supply Company in serving America's Petroleum Producers.

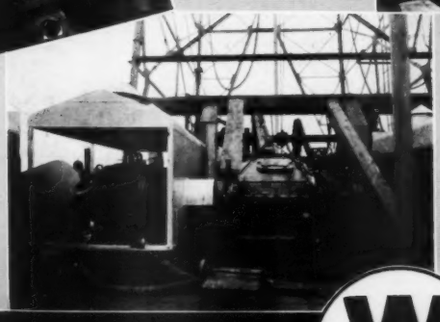


PORTABLE PUMPING UNIT—"OILWELL" unit at Huntington Beach, California. Powered by Westinghouse-Nuttall gear unit, connected by V-belts to Westinghouse weather proof type CS Motor equipped with Thermoguards and controlled by Westinghouse dust-tight Linestarter.

Typical "OILWELL"-WESTINGHOUSE INSTALLATIONS

SLOW STROKE PUMPING — This Westinghouse gear-motor provides the low speed necessary for slow stroke operation of the deep well pump.

SUCKER ROD SERVICE —These oil field engineers are weighing a well with a Westinghouse dynamometer, an important phase of "Oilwell" Sucker Rod Engineering Service.



DRILLING — This East Texas installation was made during an important chapter in advancement of drilling equipment. Hild Drive, sold by "Oilwell", powered by Westinghouse.

MUD PUMP DRIVES— Two Wilson-Snyder pumps driven by Westinghouse 200 hp. force-ventilated motors, on a drilling rig in the Monument, New Mexico field.

EFFICIENT PUMPING— Westinghouse pumping gear unit with totally-enclosed fan-cooled weather-proof motor and cast-iron weather-proof starter.

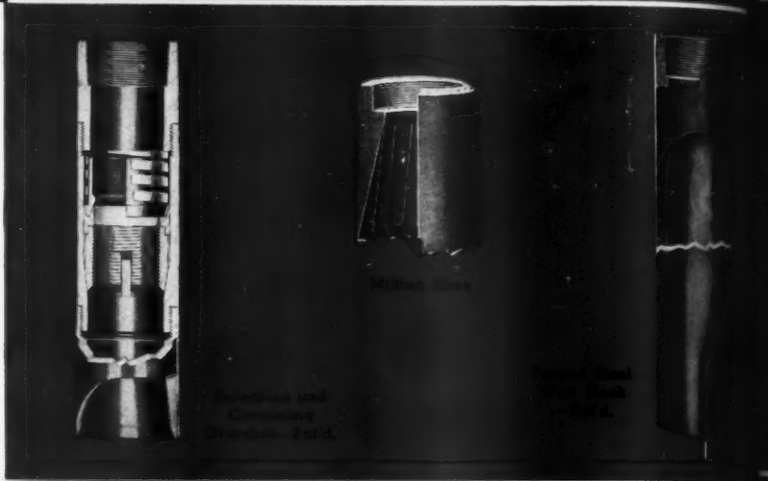
W WESTINGHOUSE ELECTRIC

Westinghouse

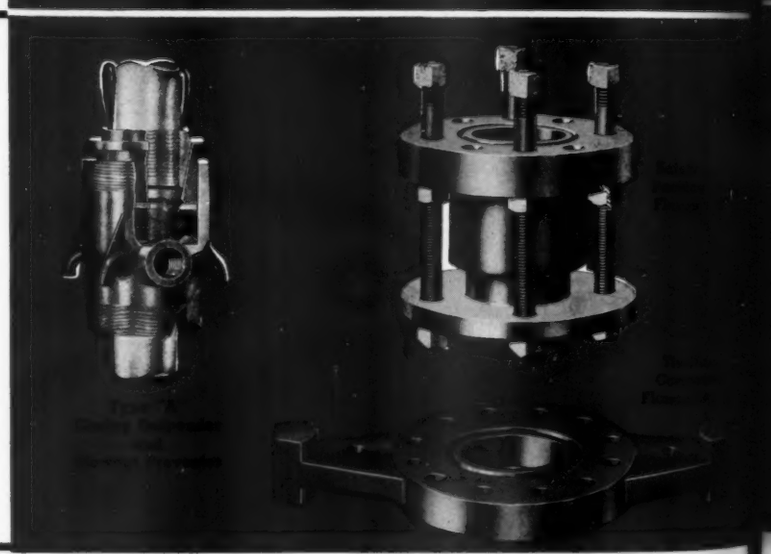
AMERICAN PRODUCTS

YOU NEED THESE "AMERICAN" PRODUCTS FOR MODERN DRILLING . . . . .

THESE EFFICIENT "FELLOWS" ARE CLEANING-UP DIFFICULT FISHING JOBS EVERY DAY . . . .



FOR CONTROLLING WELLS . . . THESE DEPENDABLE PRODUCTS CAN'T BE BEAT!

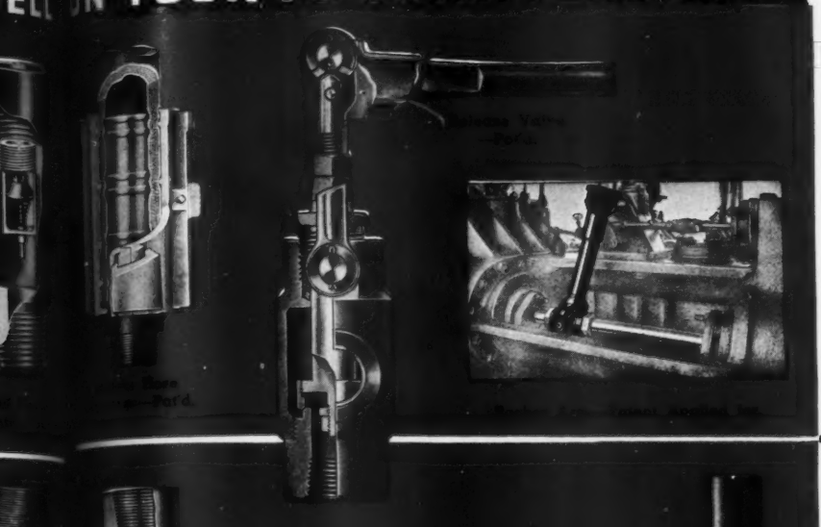


OKLAHOMA CITY, OKLAHOMA
SEMINOLE, OKLAHOMA
FITTSTOWN, OKLAHOMA
HOUSTON, TEXAS
KILGORE, TEXAS
CORPUS CHRISTI, TEXAS
MONAHANS, TEXAS
NEW IBERIA, LA.

AMER
IRON & MACHIN

for Perfect Performance

ON YOUR 75th ANNIVERSARY



Automatic Cathead . . . Because of its greater speed in operation, safety to crew, protection of machinery, and durability, this cathead has won universal acceptance. Has 4-point engagement and 2-point disengagement. Only nine parts, with but five of them working parts.

American Steam Lubricator . . . Has two high pressure bullseye sight feeds which are separately controlled so as to allow one to be removed for repairs and cleaning without interferring with operation of the other, thus eliminating "shutdowns". 12-gallon capacity and is built to withstand 350 pounds working pressure.

Drill Pipe Float Valve . . . A proven safety device for deep rotary drilling which serves as a float for drill pipe when going in the hole, and in case the string is dropped, or parted, the float will break the fall. Cannot "choke" with mud as fluid passage is as large as hole in tool joint.

Boltless Hose Coupling . . . Designed for use with high pressure rotary hose installation, now commonly used with improved deep drilling equipment. The nozzle is made of special heat treated alloy steel to withstand high velocity pressure of sand laden drilling fluid.

Release Valve . . . Consistent and increased sales of this valve prove that it's outstanding and dependable. It is simple in construction, fool-proof and rugged. Provides perfect performance at lowest cost.

Rocker Arm . . . Helps pump run more smoothly and efficiently, eliminates knocking and needless noise, and makes valves easier to adjust. Practically all working parts are fully enclosed to keep out all foreign substances. Easily installed.

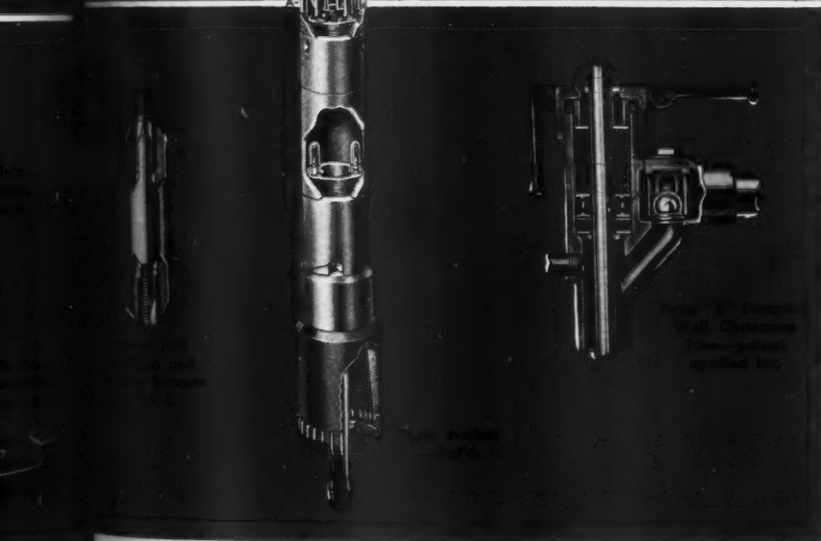
Releasing and Circulating Overshot . . . An all purpose fishing tool used successfully for fishing out any object that can be grasped with a slip type socket. American also can furnish Double Bowl Overshots, or convert your overshot into a double bowl type; thus providing an overshot ready at all times to catch both drill pipe or tool joint.

Wall Hook and Milling Shoes . . . are interchangeable with standard guide or overshot.

Although American Cone Fishing Socket was originally designed to catch loose cones, it is also successful for fishing other small objects from the hole. It will mill through shale and boulders to recover buried fish.

Type K and L Milling Shoes are designed so teeth are kept clear of cuttings, thus eliminating all unnecessary friction and wear on the mills. Made of special alloy steel which can be successfully dressed and tempered in any oil field repair shop.

Releasing and Circulating Spear . . . Used successfully the world over for fishing for liners, casing, drill pipe and tubing. Its rugged construction, simple design and quick, positive releasing feature, all combine to provide a dependable performance which saves both time and money.



Type "A" Casing Suspender and Blowout Preventer . . . Designed for extreme heavy duty. Tested to 5000 pounds with a safety factor far in excess of any pressure or depth of well that has so far been drilled. Specially designed fireproof packing.

The American Safety Packing Flange . . . is especially designed for high pressure wells to prevent sand and other substances from cutting out connections where gate valve is screwed on the oil string. Also eliminates leakage between the oil string and gate valve, caused by improper connection, or uneven tension on the rods.

The American Tie Down Companion Flange is designed to take the place of the old style casing clamps and to eliminate the use of pipe nipples between gate valves in hook-ups on high pressure wells, and at the same time it provides a correct means for tying the hook-up or Christmas Tree together.

Sucker Rod Coupling and Paraffin Scraper . . . A versatile, three-in-one tool used successfully as sucker rod guide, paraffin scraper and load equalizer. Made of one-piece heat-treated steel to resist hardest usage.

Flow Packer . . . Meets all requirements of methods used in oil well flowing and assures positive, economical performance. Designed to be run on tubing, this packer when run in a flowing well eliminates all fire and wet hazards if disc is placed in tubing and tubing oil saver is used on casing head which will control the flow of oil to the tanks.

Pumping Well Christmas Tree . . . A simplified modern method of connecting up a pumping well to the lead line—one which assures perfect performance. It contains all necessary parts in one compact steel body, such as check valve, self-lubricating stuffing box, and bleeder outlet. Only two connections are necessary, thereby eliminating leak hazards common in the usual type of hook-ups.

RICAN
WORKS COMPANY

CALIFORNIA REPRESENTATIVE
R. L. BOTHWELL
934 N. Alameda, Los Angeles, Calif.

EXPORT OFFICE
420 Lexington Ave., New York City

MULTI-FLAME LINDEWELDING

Facilitates Full-Strength Pipe Line Welds

Multi-Flame Lindewelding, when properly used, confers a new degree of dependability upon pipe line construction. It makes the maintenance-free life of the line entirely dependent upon the durability of the pipe and fittings. The Lindeweld can be made constantly as strong as or stronger than the pipe, even where the tensile strength of the pipe base material is as high as 110,000 lb. per sq. in. At the same time the Lindeweld is tough—ductile—and permanently tight.

Linde has been identified with pipe line welding since 1911, and has cooperated with the builders on more than 21,000 miles of overland pipe lines. Linde service operators, because of this long and varied experience, can help you gain the full benefit of Multi-Flame Lindewelding on your pipe line projects. The nearest Linde office will supply full details. The Linde Air Products Company, Unit of Union Carbide and Carbon Corporation, New York and principal cities.

The upper illustration is a schematic cross-section of the Multi-Flame Lindewelding Head in action. The small flames preheat the vee while the main flame melts the welding rod and post-heats the weld to impart an unusual degree of toughness to the completed joint.

The lower illustration shows Lindewelding, the modern pipe line construction method, as it is used on a rolling weld.

Everything for Oxy-Acetylene Welding and Cutting

LINDE OXYGEN • PRESTO-LITE ACETYLENE • OXWELD APPARATUS AND SUPPLIES FROM UCC LINDE UNION CARBIDE

To Best Meet Today's Needs

HUGHES
ROCK BITS

Hughes "Tailor-Made" Rock Bits meet a Modern Need with a Modern Product...

Realizing no single Rock Bit design can possibly meet today's exacting demands of the Industry, Hughes Tool Company has developed and proven specific designs, "Tailor-Made," for recognized formations, drilling weights and rotary speeds.

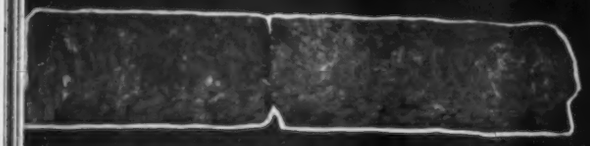
From Broken Formations to Pyrite—there's a "Tailor-Made" Hughes Rock Bit especially designed for your drilling problems.

Proven results are: more footage per bit—faster time, straighter hole and a saving of expensive round trips.

Salutation!

THE GREAT SERVICE RENDERED TO THE INDUSTRY BY THE OIL WELL SUPPLY COMPANY HAS LONG BEEN A RECOGNIZED FACT, AND WE WISH TO OFFER FELICITATIONS ON THE INAUGURAL OF THEIR SEVENTY-FIFTH ANNIVERSARY.

THE FRIENDLY RELATIONSHIP BETWEEN THE OIL WELL SUPPLY COMPANY AND THE HUGHES TOOL COMPANY BEGAN MORE THAN TWENTY-FIVE YEARS AGO AND HAS CONTINUED THROUGHOUT THE YEARS. WE COMMEND THIS INSTITUTION OF SERVICE TO THE ENTIRE INDUSTRY.



WORLD'S DEPTH RECORD
CORE RECOVERY AT 12,786 FEET

"Readable" Cores

HUGHES
CORE BITS
GIVE YOU WHAT YOU WANT

Hughes Core Bits have been designed and built to thoroughly do the job for which they are intended: to bring to the derrick floor cores of a quality and quantity necessary for correct engineering study.

New and improved features of Hughes Core Bits provide greater economy in operation . . . larger diameter cores . . . floating core barrel . . . double core catcher . . . interchangeability of hard and soft formation heads . . . core barrel vent to relieve pressure above core . . . plug for keeping barrel clean when going in hole . . . ease of dressing and handling.

Simplicity, long life and proven performance of Hughes Core Bits offer you the assurance of "Cores When You Need Them."

Protection to your Well Investment

A Hughes Christmas Tree on Test. Careful inspection and complete tests on all Hughes Valves and Fittings provide maximum protection to your well investment.

HUGHES

VALVES & FITTINGS

Hughes Heat-Treated Cast Chrome Nickel Steel Valves and Fittings offer maximum protection, especially on high pressure wells or where unusual conditions may be encountered.

The Gate in Hughes Valves is of the solid wedge type accurately guided by ribs in the valve body. Seating surfaces are as finely finished as the cylinders in your car. Lubrication features incorporated in Hughes Valves further insure a gas or fluid tight seal, greater ease of operation and longer life.

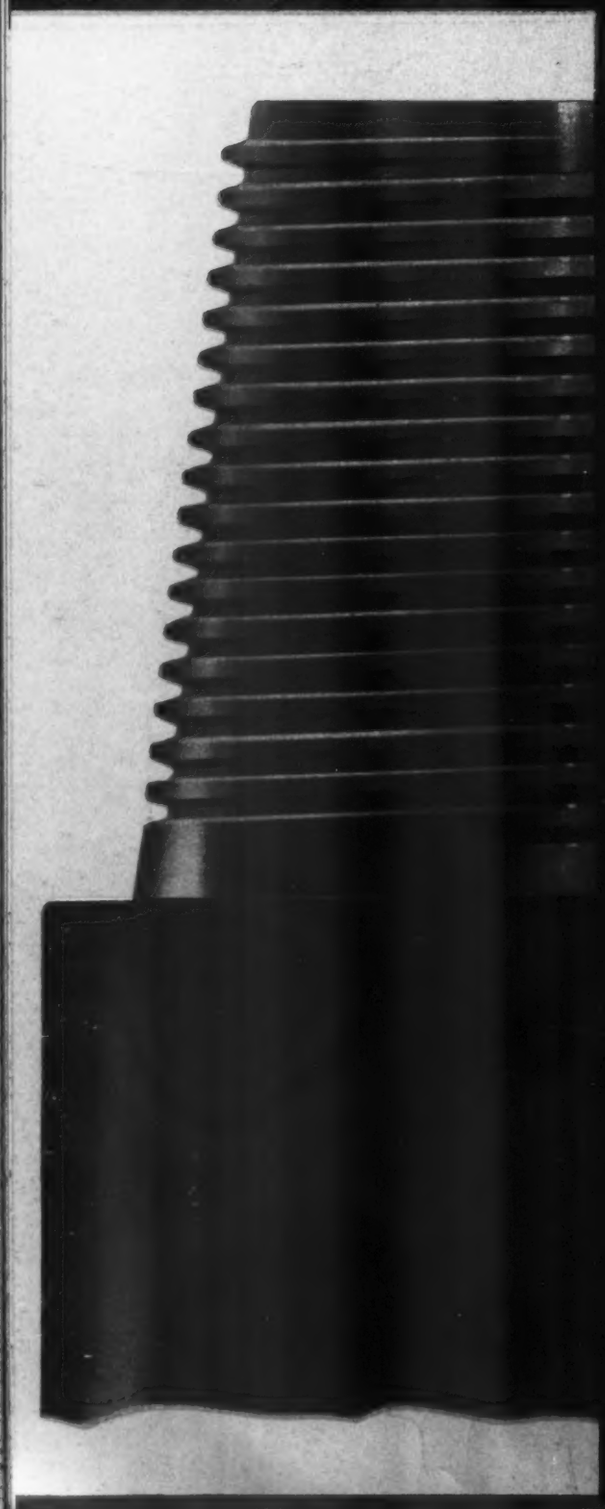
Design, material, workmanship and complete tests combine in giving to Hughes Valves and Fittings the position of leadership in the Industry.

You can depend on Hughes Valves and Fittings.

Bucking Hughes Tool Joints on drill pipe under controlled torque, – a contribution by Hughes Tool Co. to the Industry.

FOR THE REALLY *Tough Jobs*

HUGHES
TOOL JOINTS



Important Steps in the manufacture of Hughes Tool Joints include:

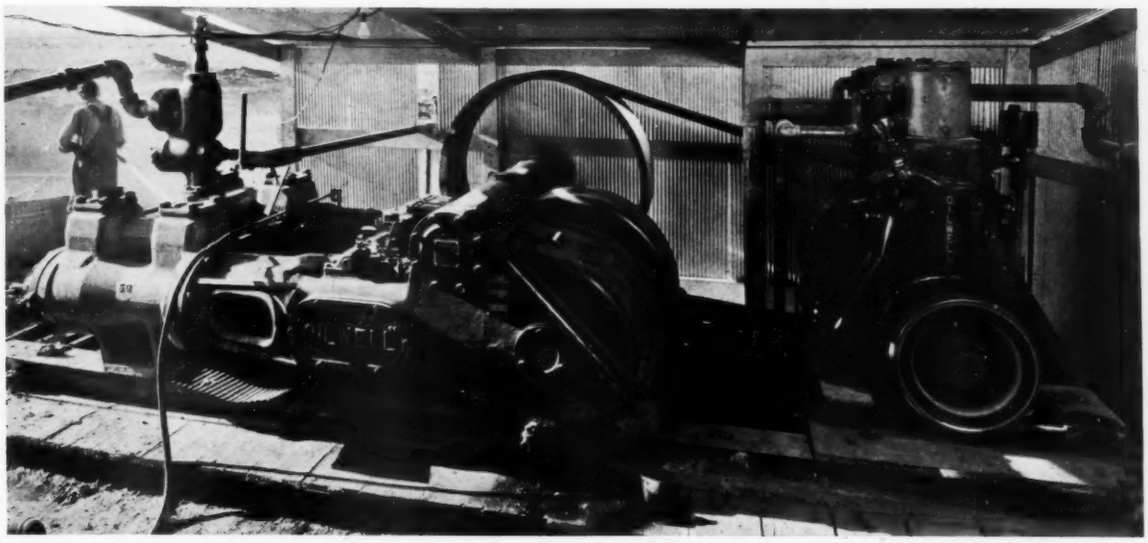
- —*Selection of highest quality Alloy Steel.*
- —*Proper Heat-Treatment which renders the steel strong, tough and wear-resisting.*
- —*Final rigid inspections and tests. (Every Hughes Tool Joint receives 35 individual inspections and tests before being put into field service.)*

Each of these steps has been worked out by years of manufacturing experience and costly research—All this and more you get in every Hughes Tool Joint, but Hughes Service goes further—Bucking of Tool Joints on pipe, under controlled torque, was pioneered and developed by Hughes Tool Company—Proper welding of joint to pipe after Bucking-Up offers the best drill stem insurance against twist-off. Hughes facilities and equipment for Bucking-Up and Welding-On provide the highest type of service to the Industry.

HUGHES TOOL COMPANY
HOUSTON, TEXAS U.S.A.

Congratulations to "OILWELL"

on the occasion of its Diamond Jubilee



"Oilwell" No. 7 Vertical Twin Cylinder Steam Engine with TIMKEN-equipped crank shaft driving an "Oilwell" No. 14-P Power Slush Pump equipped with TIMKEN Bearings on the crank shaft and crank pins.

★

Not a little of the Oil Well Supply Company's success has been due to keen insight into its own problems and directness in solving them.

Thus years ago when it became apparent that plain bearings could not much longer be expected to cope with the rapidly increasing operating speeds and loads, "Oilwell" adopted TIMKEN Bearings and has been one of their staunchest advocates ever since. And as more and more "Oilwell" equipment has gone on TIMKEN Bearings, their value has received stronger and stronger testimony.

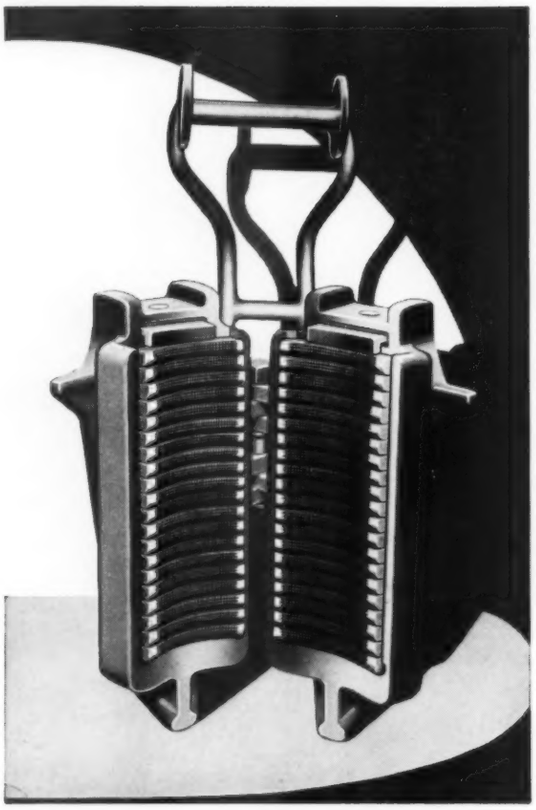
Today "Timken Bearing Equipped" is recognized as one of the surest guides to machines that perform better, last longer and cost less to operate and maintain.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

Manufacturers of Timken Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; Timken Alloy Steels and Carbon and Alloy Seamless Tubing; and Timken Rock Bits.

TIMKEN *TAPERED ROLLER* BEARINGS

EXPERIENCE *Plus*



New MISSION ROTARY SLIPS

Saves money by saving pipe and speeding up round trips

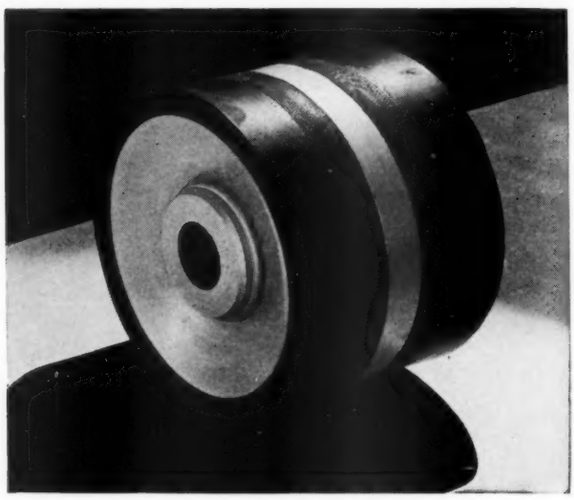
THE UNIQUE PRINCIPLE OF ROLLING DOGS gives a gradual, cushioning grip. Positively will not cut, mar, or bottleneck the pipe. Insurance against many long drawn out, hazardous, and costly fishing jobs due to damaged pipe.

POSITIVELY ELIMINATES THE GREATEST CAUSE OF DELAY IN HANDLING PIPE, namely sticking in bowl. The dogs roll away from the pipe as it is pulled assuring instant release. Fast handling of pipe saves money.

QUICK INSTALLATION ON THE DERRICK FLOOR of new dogs and other worn parts, puts old slips on a par with new slips, in efficient, economical performance.

EASIER AND FASTER TO HANDLE. Saves crews and costly accidents.

Improved MISSION SLUSH PUMP PISTONS



Cut upkeep costs in half.

Replaceable rubbers on a long-lasting body. Replaceable on the derrick floor without removing piston from rod.

DROP-FORGED, CHROME NICKEL STEEL . . . ONE PIECE CONSTRUCTION
. . . resists any pressure.

DESIGNED TO FIT A TAPERED ROD
. . . preventing cutouts around piston and rod, saving rod and piston costs.

GREATLY INCREASED WIPING SURFACE PREVENTS BY-PASSING
. . . thereby lengthening the life of piston and liners.

MAKING ECONOMY RECORDS IN EVERY OIL COUNTRY THE WORLD OVER.

■

MISSION SLIPS ARE USED PRACTICALLY 100% ON ALL WELLS DRILLED BELOW 8,000 FEET IN THE MID-CONTINENT AND GULF COAST FIELDS . . . . BY FAR THE LARGEST SELLING SLIP THROUGHOUT THE WORLD.

MISSION MANUFACTURING CO.

HUMBLE ROAD » » » » » » HOUSTON, TEXAS

MISSION SLIPS . . MISSION VALVES . . MISSION PISTONS . . MISSION PISTON RODS . . MISSION SWABS

PROGRESSIVENESS

• • • IN A MANUFACTURER OR SUPPLY HOUSE
ASSURES YOU of **better equipment, better values,** and **safety in buying.**

THE THREE QUARTERS OF A CENTURY OF EXPERIENCE OF THE OIL WELL SUPPLY COMPANY spans the history of the American oil industry—from three years after the 69½ foot Drake discovery well to modern 2-mile-deep wells.

This is a rich progressive experience, indeed, to back up recommendations as to the proper tools for modern drilling.

NEW MISSION VALVELESS SWABS

TANDEM MODEL

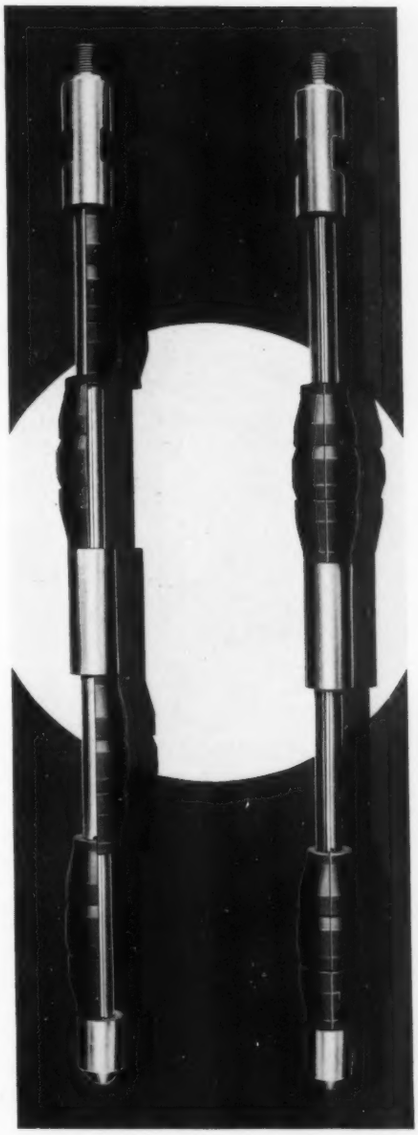
SWABBING 3 TO 15 TIMES FASTER
. . . protecting the sand . . . profits from oil gotten into the tanks quicker WOULD INTEREST YOU, WOULDN'T IT?

THE MISSION VALVELESS SWAB **FALLS LIKE A PLUMMET** due to the **SPLIT-RUBBER PRINCIPLE.**

Half the rubber rises above and clear of the stationary half, allowing direct and unrestricted fluid passage.

SAFER: Gas pressure will open split rubber, permitting gas to by-pass, resuming it's load without loss after gas has passed. No loose line over derrick floor to endanger crew.

NUMEROUS RECORDS INVARIABLY SHOW 3 TO 15 TIMES FASTER SWABBING WITH MISSION VALVELESS SWABS



FALLING
Note that half of each rubber has raised above stationary half . . allowing an area for fluid passage larger than the area of flow around the A. P. I. pin.

UP STROKE
Note that movable half of each rubber has dropped back beside its other half. Rubbers now in swabbing position.

MISSION MANUFACTURING CO.

HUMBLE ROAD » » » » » » HOUSTON, TEXAS
MISSION SLIPS . . MISSION VALVES . . MISSION PISTONS . . MISSION PISTON RODS . . MISSION SWABS

P R O V E N

HANLON-WATERS INC.
H-W

D E P E N D A B I L I T Y

Two batteries of 30 in. x 11 ft. x 500 lbs. W.P. and 3 ft. x 16 ft. x 500 lbs. W.P. HANLON-WATERS Oil & Gas Separators installed at the Continental Oil Company gasoline plant in the Tepetate Field. A Separator for each lease with flow lines running to individual wells, in place of usual field installation of Separator and Storage Tanks at the well.

OIL & GAS SEPARATORS
WEIGHT & SPRING CONTROLLED REGULATORS
PILOT REGULATORS
LIQUID LEVEL CONTROLLERS
Bassler Liquid Meters

EQUIPMENT
FOR
PRODUCTION
PIPE LINES
GASOLINE PLANTS
REFINERIES
POWER & INDUSTRIAL PLANTS

A.P.I. BOLTED TANKS
BOOMER OR LOAD BINDERS
BOILER GAUGE COCKS
Flexible Leak-Proof
VICTAULIC
Pipe Couplings
American Air Filters

HANLON-WATERS, INC.

NATIONAL BANK OF TULSA BUILDING, TULSA, OKLAHOMA

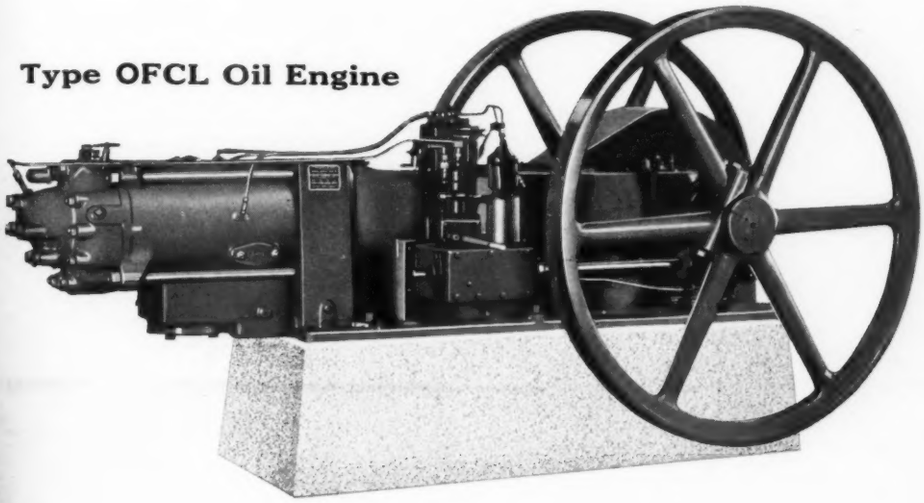
HOUSTON DALLAS LONGVIEW CORPUS CHRISTI WINK ODESSA PAMPA, TEXAS
OKLAHOMA CITY, OKLAHOMA SHREVEPORT, LOUISIANA EUNICE and HOBBS, NEW MEXICO

EXPORT REPRESENTATIVE: OIL WELL SUPPLY COMPANY

Service from Start to Finish

Franklin Valveless Oil and Gas Engines have always been characterized by outstanding simplicity, ruggedness and economy of operation. Ask any user!

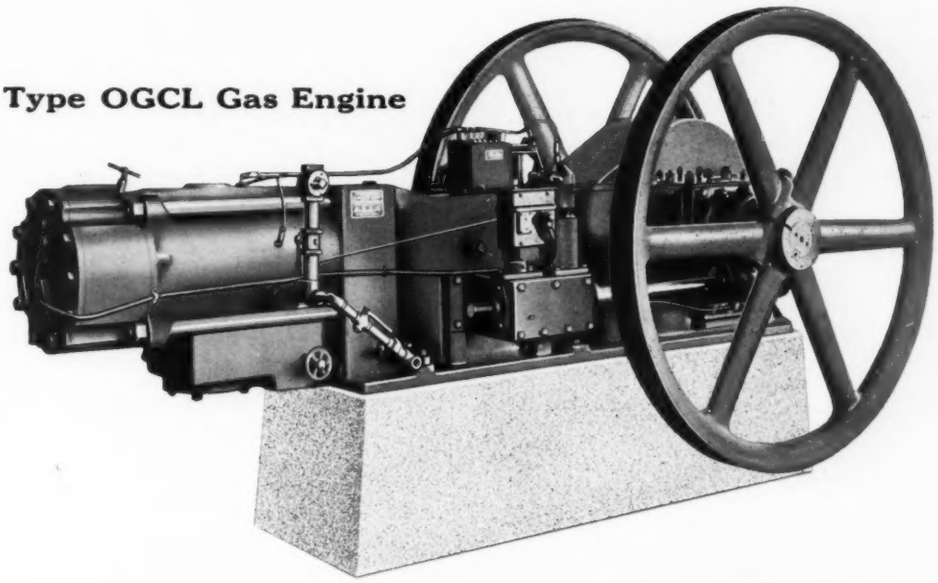
Type OFCL Oil Engine



Type OFCL Oil Engine, 40 H.P., is designed and built for oil field loads. Equipped with Bosch Fuel Pump and Pickering Governor. This unit is ideal for Pumping, Drilling, or power requirements and may be converted from Oil to Gas by two men in 2 hours—no special tools required.

Type OGCL Gas Engine shown in the illustration at the right is a sturdy and dependable prime mover, 40 H.P. Its ability to handle economically Pumping, Drilling, or power requirements has been proven in hundreds of instances and in every known oil field. No other Gas Engine enjoys its simplicity. Readily convertible to oil fuel.

Type OGCL Gas Engine



Franklin Valveless produces a full line of single cylinder convertible Gas and Oil Engines in sizes ranging from 25 H.P. to 65 H.P., suitable for all power requirements. Consult ourDistributors for further details or write Direct.

OUR PRODUCTS are DISTRIBUTED by OIL WELL SUPPLY CO.

Franklin Valveless Engine Company

Franklin, Pennsylvania

...DOING THE JOB

There's a reason why Kerotest Valves and Fittings enjoy the confidence of leading drillers throughout the petroleum world . . . there's a reason why Kerotests are used on the world's deepest wells . . . why they are specified for the most severe service and high pressure operations. The reason is an UNBROKEN RECORD OF PERFECT PERFORMANCE . . . the KNOWLEDGE THAT KEROTEST HAS BUILT QUALITY INTO EVERY PART . . . the assurance of TIME PROVED EXPERIENCE that SAFETY AND DEPENDABILITY are inherent in every Kerotest Product.

THE WORLD OVER

KEROTEST MANUFACTURING COMPANY

PITTSBURGH, PA.

Export Distributors—OIL WELL SUPPLY COMPANY—Dallas, New York, Tampico, London

Manufacturers of Cast Steel Drilling Valves . . . Flow Line Valves . . . Fittings for Oil Field Service . . . Forged Steel Fittings for Every Service . . . Master Controls and Tubing Hangers . . . Forged Steel and Cast Steel Control Chokes . . . Forged Steel Flange Unions . . . High Pressure Oil Savers, or Cable Tool Blowout Preventers . . . Cast Steel Balanced Throttle Valves . . . Forged Steel Gauge Shut-off Valves . . . Christmas Tree Hook-Ups . . . Refinery and Power Plant Valves . . . Universal Joints for Drilling and Flow Line Valves . . . Armco Ingot Iron Gaskets . . . By-Pass Assemblies for Drilling Valves.

AMSCO Sheaves—

for "Oilwell" No. 200

Part of an order for 450-36" O. D. AMSCO Manganese Steel Sheaves for the Oil Well Supply Company are pictured. These Sheaves for use in "Oilwell" Blocks, are interchangeable in their "66" Streamline Traveling Block and No. 200 Crown Block.

The unusual wear resisting quality of AMSCO Manganese Steel Sheaves is due to the inherent toughness and closely knit structure of the steel and to the unusual property which Manganese Steel possesses of becoming more compact and hard on the surface when subjected to pressure or impact.

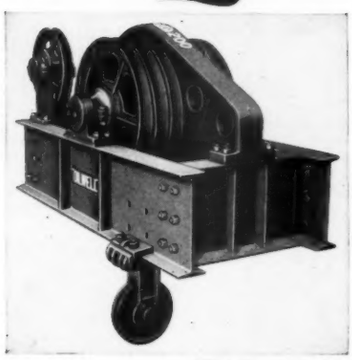
AMSCO Manganese Steel will surface-flow somewhat under great pressure, or impact, but to a great extent this flow very rapidly hardens, resulting in a hard wear resistant surface (with a ductile backing) which is self-renewing, for as soon as a given layer is worn away the next layer, as it becomes surface, at once hardens under the pressure.

In a Sheave of Manganese Steel the groove surface instead of breaking off in tiny splinters under pressure and wear, as is the case with other metals, takes on a glass-like polish. This means that the groove wears out more slowly and there are no metal particles to imbed themselves between the rope strands. Wire rope used with AMSCO Manganese Steel Sheaves will last, conservatively, 25 percent longer than with ordinary Sheaves.

Be sure — for longest life in both sheave and cable, insist upon AMSCO MANGANESE STEEL SHEAVES — they will save you a lot of money and trouble.

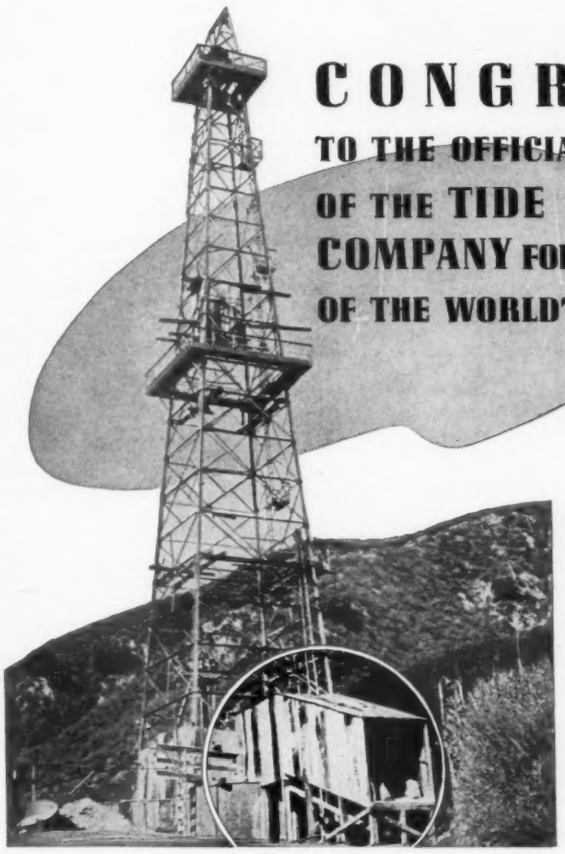
AMERICAN MANGANESE STEEL COMPANY
Division of American Brake Shoe & Foundry Company
408 East 14th Street, Chicago Heights, Ill.
Foundries at Chicago Heights, Ill.; New Castle, Del.; Denver, Colo.; Oakland, Calif.; Los Angeles, Calif. • Offices in Principal Cities

AMSCO
TRADE MARK REGISTERED



Crown Blocks and "66" Streamline

Traveling Blocks®



CONGRATULATIONS

TO THE OFFICIALS AND DRILLING DEPARTMENT OF THE TIDE WATER ASSOCIATED OIL COMPANY FOR THEIR SUCCESSFUL COMPLETION OF THE WORLD'S DEEPEST PRODUCING WELL ON JANUARY 17

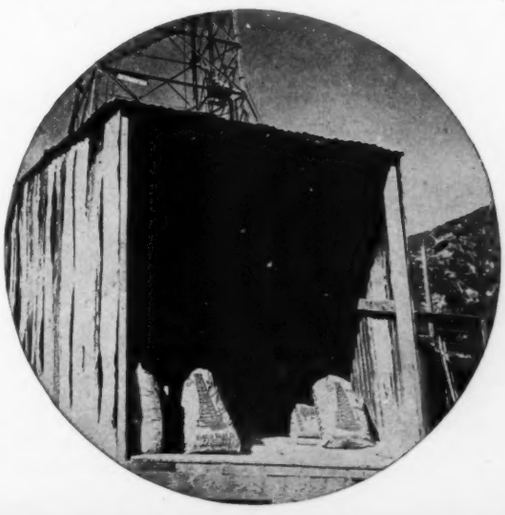
McGONIGLE No. 12
VENTURA AVE. FIELD
VENTURA, CALIF.
DEPTH – 10,569 FEET

IT IS GRATIFYING TO US THAT **AQUAGEL** AND **BAROID** WERE USED IN THE DRILLING MUD

BAROID PRODUCTS

BAROID: Extra-Heavy Colloidal Drilling Mud.
AQUAGEL: Trouble-Proof Colloidal Drilling Mud.
STABILITE: An Improved Chemical Mud Thinner.
BAROCO: An Economical Salt Water-Resisting Drilling Clay.
FIBROTEX: For Preventing or Regaining Lost Circulation in Drilling Wells.

Stocks carried & Service Engineers available in all active oil fields of the U. S. A.



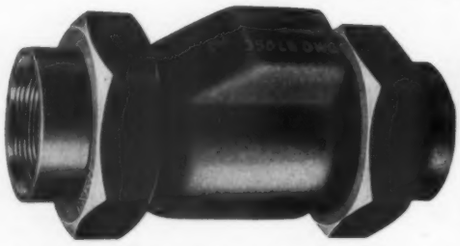
BAROID SALES DEPARTMENT

NATIONAL PIGMENTS & CHEMICAL DIVISION OF
NATIONAL LEAD COMPANY
BAROID SALES OFFICES • LOS ANGELES • TULSA • HOUSTON

—CATAWISSA—

VALVES

Save—Time, Labor and Money

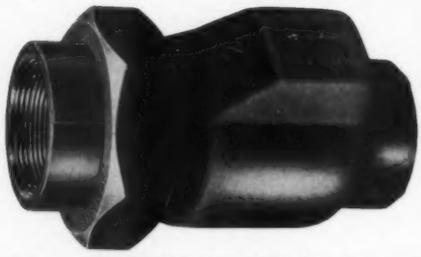


Sectional view of No. 210 Union Swing Check Valve.

Catawissa Union Swing Check Valves are more easily accessible than any other type of swing check valves and can be cleaned or repaired with practically no loss of time.

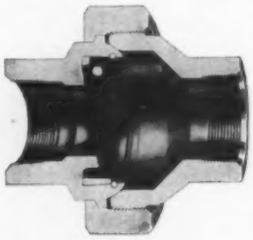
The No. 210 valve FLOW LINE TYPE for GENERAL USE, shown above is especially adapted for lines in which no stop is installed close to the check valve. Having a union connection on both ends this valve enables the line to be broken at the inlet end of the valve enabling the check to hold contents of the line while it is open. This valve eliminates an additional union and nipple either in the outlet or the inlet end of line. Double Catawissa Forged Steel Union Nuts and Male Ends. Refax metal body. 200 lbs. W.S.P., 350 lbs. O.W.G. Tested to 1000 lbs. Non shock hydrostatic pressure. Hitensiloy Flapper and Assembly—Stainless Steel Axle—Hitensiloy Inserted Seat. Valve body coated black—nut coated orange color. Size 2", 2½", 3".

CATAWISSA VALVES WILL NOT DEVELOP BODY LEAKS.



Sectional view of No. 200 Union Swing Check Valve.

The No. 200 valve—STANDARD or REGULAR VALVES for General Use. Having a union connection on the outlet end, the line can be broken at the valve, frequently eliminating the necessity of a union and nipple in the line. Single Catawissa Forged Steel Union Nut and Male End. Refax metal body. 200 lbs. W.S.P., 350 lbs. O.W.G. tested to 1000 lbs. Non shock hydrostatic pressure. Hitensiloy Flapper Assembly—Stainless steel axle—Refax metal integral seat. Valve body coated black—nut coated orange color. Sizes ¾" to 3".



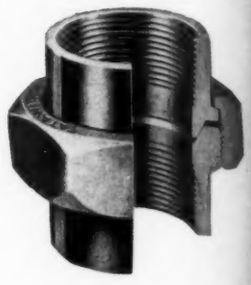
No. 350 EXTRA HEAVY UNIONS

Especially adapted for use on boiler feed lines. For 350 lbs. W.S.P., 750 lbs. O.W.G. Eliminates the necessity of an additional union and nipple as opening the union nut opens the line. Made in 2" size only.

UNIONS

Save—Leakage, Labor and Money

CATAWISSA UNIONS ARE THE ORIGINAL HOT FORGED STEEL UNIONS FORGED FROM SOLID BARS



STANDARD FORGED STEEL UNIONS

Catawissa Standard Unions are the most efficient and economic union for general service.

SEATS—Steel to steel, Bronze to steel, Stainless Steel to steel. 55 deg. angle on the Female end to a Ball on the Male end insuring perfect seal. Recommended for 2,000 lbs. non-shock pressure to 150 deg. F. SIZES—⅛" to 3". Black or Udylited.

DOUBLE EXTRA HEAVY FORGED STEEL UNIONS

For use where extreme strength is required, for Power Piping, Hot Oils, High Temperatures, Ammonia, High Pressures of Gases or Liquids. SEATS — Steel to steel, Bronze to steel, Stainless Steel to steel. Perfect seal assured by 55 deg. angle on Female end to a ball on the Male end. SIZES—⅛" to 2". Black or Udylited. Recommended for 6000 lbs. non-shock pressure to 150 deg. F.

USE HAMMER OR WRENCH

FORGED STEEL LUG NUT UNIONS for all piping purposes requiring a quick closing and quick opening union. It can be applied with either hammer or wrench. Triangular shape eliminates distortion or breaking extensions, also eliminates glancing blows from hammer by presenting a straight surface to hammer face. For cold working pressures to 2000 lbs. SIZES—2", 2½", 3". Black or Udylited.

See Composite Catalog 1937

Send for Bulletin 6

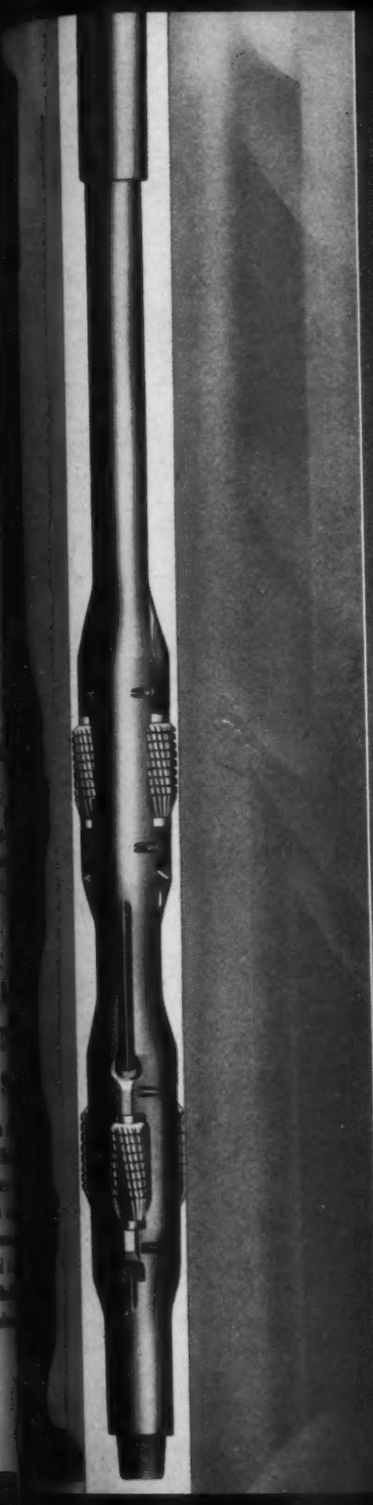
Stocked by all OIL WELL SUPPLY CO'S Stores in all Fields

Stocked by all OIL WELL SUPPLY CO'S Stores in all Fields

THE CENTRAL FORGING CO

General Office and Plant
CATAWISSA, PA.

Western Division Office
TULSA, OKLA.

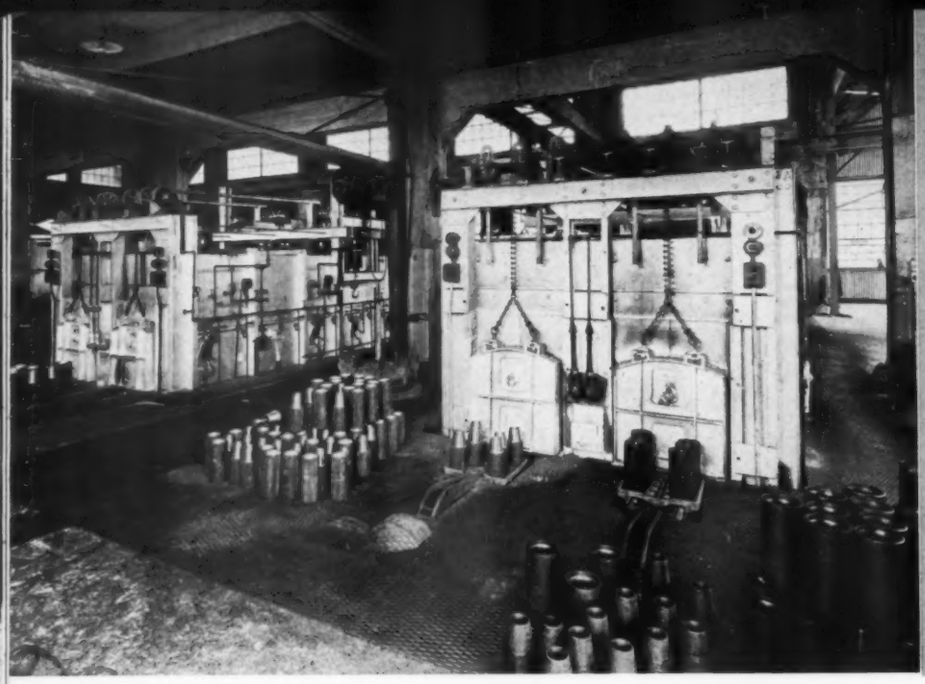


REED REAMERS

rged from Chrome Nickel
oy Steel — carefully ma-
ned and heat-treated in
ectrically operated, automat-
ly controlled furnaces. The
ring blocks holding the
mer cutter assembly are
ecially case hardened and
mbedded into the reamer
dy by welding, reducing the
zard of lost bushings or
ns.

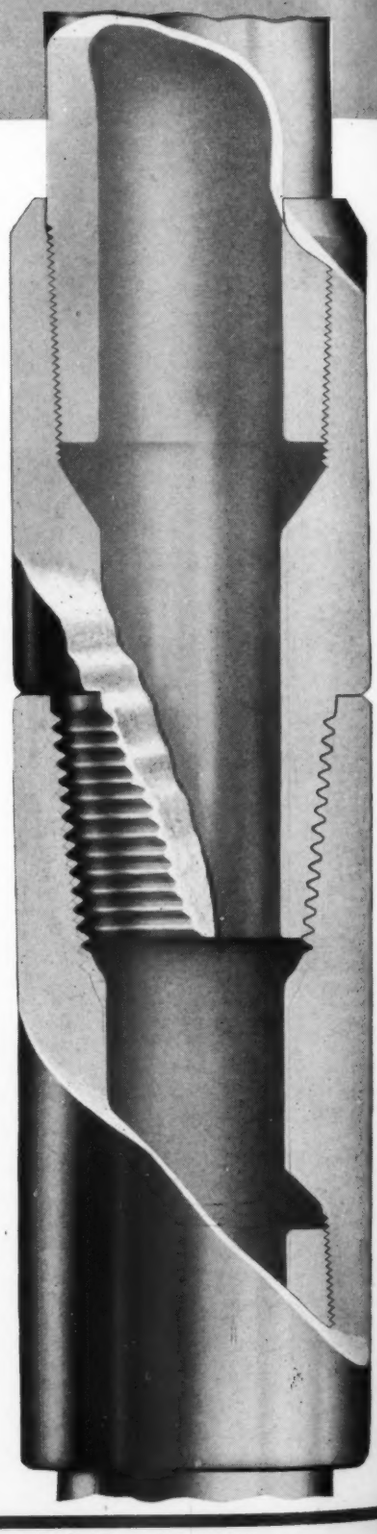
The REED DK ROCK BIT

WITH THE COMBINATION BALL THRUST AND ROLLER BEARING ASSEMBLY PLUS: IMPROVED METALLURGY IN THE BIT CUTTERS AND HARD SURFACING OF THE CUTTER TEETH, PROVIDING A MATERIALLY INCREASED TOTAL FOOTAGE PER BIT: REED DK BITS GIVE FASTER AVERAGE CUTTING SPEEDS WITH LESS WEIGHT AND MORE HOLE PER BIT.



REED TOOL JOINTS

FOR GREATER DEPENDABILITY



FROM THE ROUGH TO THE FINISHED PRODUCT

REED TOOL JOINTS

ARE UNDER COMPLETE METALLURGICAL AND INSPECTION CONTROL

●

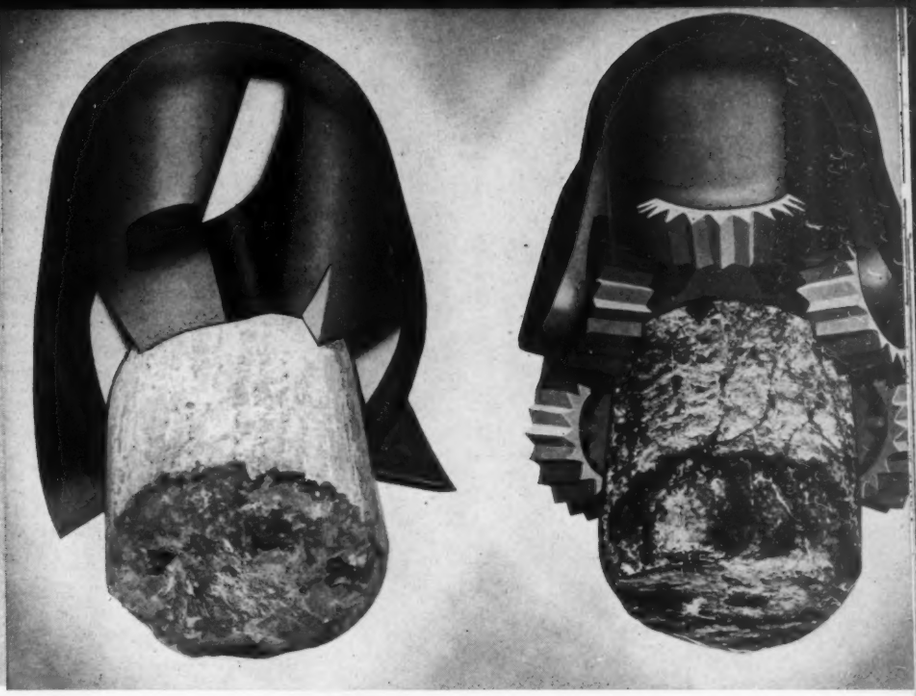
YOUR ASSURANCE FOR MORE WELLS PER STRING

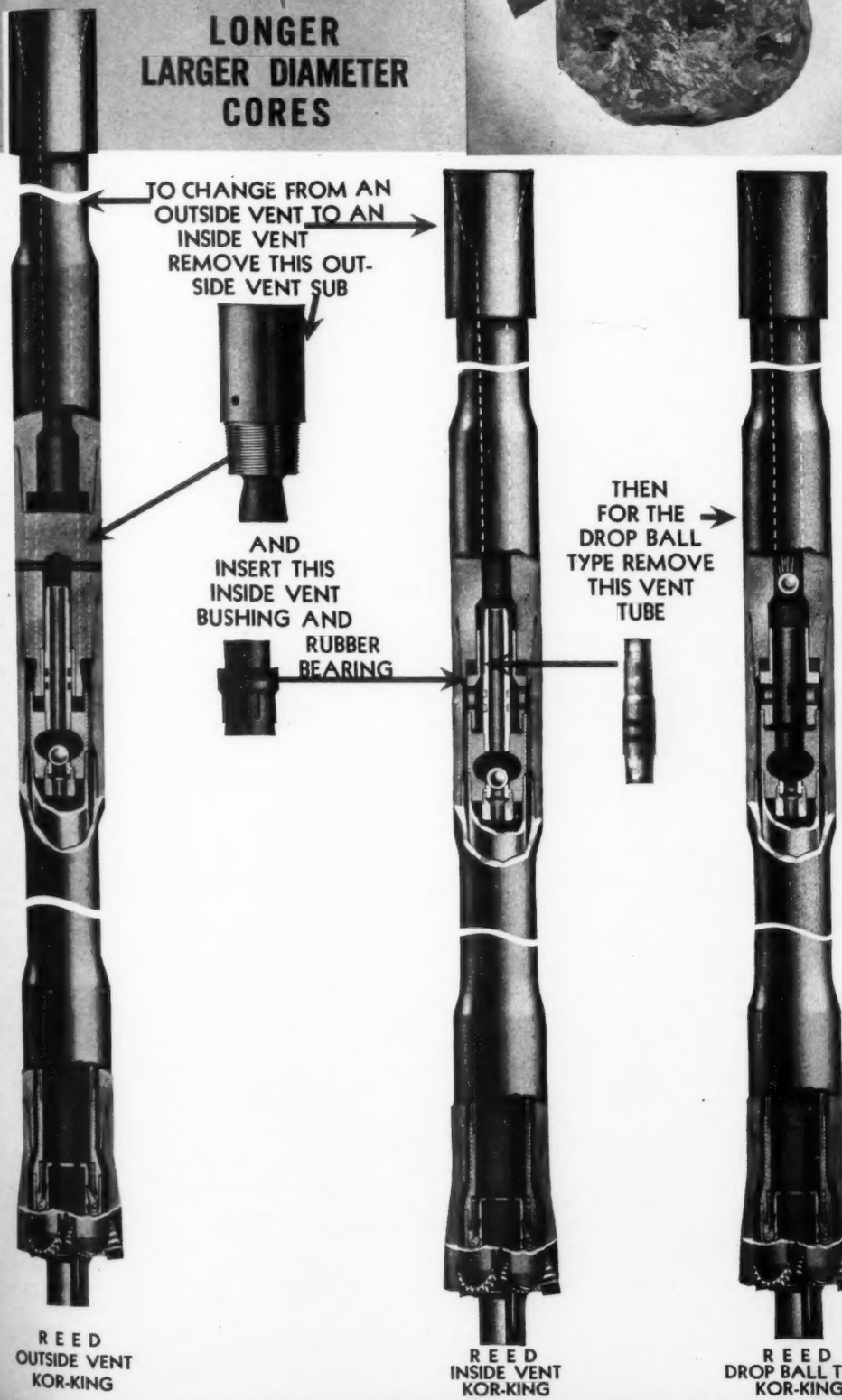
WHEREVER THERE IS ROTARY DRILLING YOU WILL FIND REED ROTARY DRILLING TOOLS "GETTING THE JOB DONE"

The New REED Kor-King CORE DRILL

ESPECIALLY DESIGNED FOR GREATER EASE OF HANDLING AND INCREASED PERCENTAGE RECOVERY OF

LONGER LARGER DIAMETER CORES




TO CHANGE FROM AN OUTSIDE VENT TO AN INSIDE VENT REMOVE THIS OUT-SIDE VENT SUB
AND INSERT THIS INSIDE VENT BUSHING AND RUBBER BEARING
THEN FOR THE DROP BALL TYPE REMOVE THIS VENT TUBE

REED OUTSIDE VENT KOR-KING

REED INSIDE VENT KOR-KING

REED DROP BALL TYPE KOR-KING

ADVANTAGES

- NON-ROTATING INNER BARREL
- NON-ROTATING CORE CATCHER
- OUTSIDE VENT—RELEASING THE PRESSURE ABOVE THE CORE
- IMPROVED RUST-PROOF, TOGGLE TYPE CORE CATCHER
- CORE CATCHER PROTECTOR
- INCREASED DIAMETER CORES
- CORE DRILL ELEVATOR—ELIMINATING HANDLING WITH CATLINE

SOFT FORMATION CUTTER HEAD (INTERCHANGEABLE)

REED ROLLER BIT COMPANY

REED
ROTARY DRILLING TOOLS
SPEED-ECONOMY
DURABILITY

REED
DRILL COLLARS

Forged from carefully selected chrome nickel alloy steel, accurately machined and bored . . . Scientifically heat-treated for that necessary tough hardness and assured dependability.

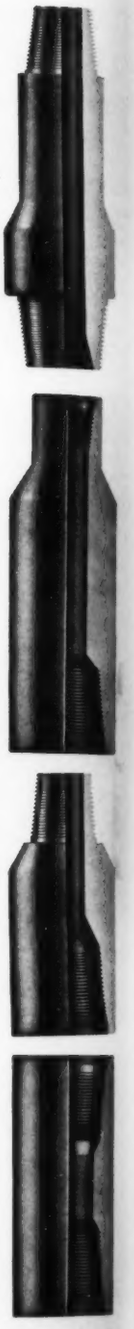
Manufactured to A.P.I. design or to your specifications, in lengths up to 30 feet.

REED
STEP REAMER
OR
HOLE OPENING BIT

The Reed Step Reamer or Hole Opening Bit was designed primarily to enlarge hole. It is often advisable, when a large hole is wanted, to first drill a small hole and then to ream it to the desired diameter. It is also used to ream down core holes and the pilot insures following the course of the original hole. The bit is equipped with regular Rock Bit cutters and any type pilot desired can be furnished.

REED
REPLACEABLE BLADE
FISH-TAIL BITS

The Reed Replaceable Blade Fish-tail Bit has all the advantages of the regular hard surfaced fish-tail bit plus: **less likelihood of breakage** because the blade is of forged alloy steel and heat treated—**stays sharp longer** because the forged steel permits a thinner blade than is safe to use with built up blades—**efficient washing action** because the slush impinges directly onto the cutting edge of the blade—a **long reaming edge** is hard surfaced to hold the gauge of the hole being drilled until the blade is completely dulled—all transportation of bits to the shop for redressing eliminated —**the cost of a blade is no more than the cost of redressing an ordinary fish-tail bit.**



REED
SUBSTITUTES

Forged from chrome nickel steel, accurately machined and given the same scientific heat treatment as Reed Tool Joints.

REED ROLLER BIT CO.

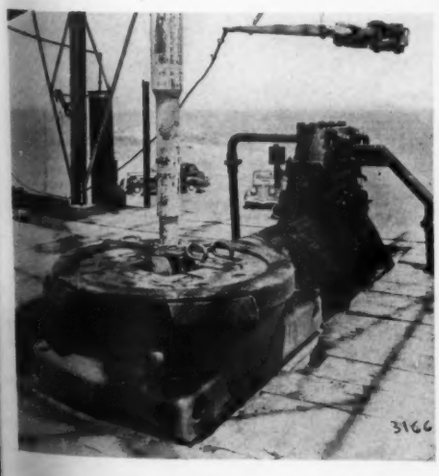
LOS ANGELES HOUSTON OKLAHOMA CITY NEW YORK

Distributed through Supply Companies Everywhere

Mid-Continent and Gulf Coast Distributors for MARTIN-DECKER PRODUCTS

Flexibility in balancing multiple-well pumping installations is a feature of the modern Wheel-Type Counterbalanced Back Crank

The constant endeavor to drill straighter holes and obtain greater footage from bits has resulted in the development of the hydraulic feed control



This unit, consisting of a rotary direct-driven by a twin-cylinder vertical steam engine, is representative of the modern steam-saving equipment now used in many oil fields

REAMERS—CLEANERS—BAILERS
WALL SCRAPERS—HOLE ENLARGERS
all with a known record of
PROVEN PERFORMANCE

Since 1914 we have been making oil field tools for certain specific purposes. Never yet has one of these tools been manufactured and offered to the industry simply on the theory that it would do the job. On the other hand every tool, and every improvement of that tool has been made based on *known definite* needs of the industry to meet certain problems connected with the drilling and proper production of oil wells.

Constant association and contact with men in the industry *who know*, together with our accumulation of field experience has provided us with the knowledge that has resulted in the building of tools of *known value through proven performance.*

Reamers that really ream—don't just corkscrew down through the hole. Reamer cutters that stand the gaff over long periods, without becoming sloppy through wear either on pin or cutter, and that do not break pins, tear out of reamer body or loose out in the hole.

Bailers and cleaners that go down into the hole and do the job they are supposed to do, and do it with minimum effort and maximum efficiency and speed.

Wall Scrapers and Roller Cutter Hole Enlargers that do scrape and enlarge the hole just as required for the particular operation.

And—a half dozen other good tools—all described and illustrated in the 1937 issue of the Composite Catalog.

These are the tools upon which Grant Oil Tool Company has built a world-wide *reputation of performance.*

Sold by our good friends the

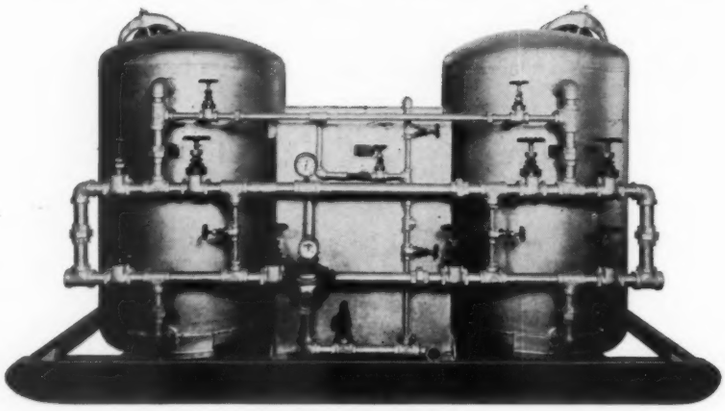
OIL WELL SUPPLY COMPANY

—whom we are happy to congratulate on this their Diamond Jubilee.

GRANT OIL TOOL CO.

2042 E. Vernon Ave. **Los Angeles**

Royal Portable H.P. ZEOLITE Water Softener



2-C MODEL

Delivers Zero Hardness Water to Boilers

Filters and Softens—Eliminates Clogging of Zeolite caused by turbid water.

Eliminates use of compounded chemicals by removing all scale forming elements from feed water and prevents corrosion.

Models built up to 350-lb. Working Pressure.

Available in sizes for both steam and internal combustion engine drilling rigs.

Service engineers in all fields.

Carried in stock at Tulsa and at Oil Well Supply Co. Store Points. Shipped by rail, or delivered on job by truck.

ROYAL PRODUCTS:

Zeolite and Lime Soda Systems
Royal 900° Aluminum Paint
Royal 700° Black Boiler and Stack Paint
Royal Special Formula Water Treatments
Royal Roof Coating and Boiler Wall Coating
Royal Tool Joint Dressing.

WE SOLICIT YOUR BUSINESS ON ANY WATER TREATING PROBLEMS FOR DRILLING—REFINING—NATURAL GASOLINE.

ROYAL MFG. CO., Box 693, Tulsa, Okla.

No. 1523

No. 1022

Duff-Norton Genuine Barrett Automatic Lowering Jacks. In 5, 10, 15 and 20 Ton Capacities.

For all your lifting or wrenching requirements

DUFF-NORTON JACKS

Always Safe, Dependable,—Easy to operate.
Made by the World's Largest and Oldest Manufacturer of Jacks for Every Purpose.

THE DUFF-NORTON MANUFACTURING COMPANY
PITTSBURGH, PENNSYLVANIA

Carried in Stock by
OIL WELL SUPPLY COMPANY

No. 2510-C

Duff-Norton Ball Bearing Journal Jacks. In 15 to 50 Ton Capacities.

Duff-Norton Self Lowering Speed Controlled Jacks. 75 to 100 Ton Capacities.

No. 7263-C

Listen in—EVERY FRIDAY NIGHT at 7:45 P. M., E.S.T.
"The House That Jacks Built" Radio Program
WEAF, *New York;* WMAQ, *Chicago;* KDKA, *Pittsburgh*
ENTERTAINMENT THAT OIL MEN LIKE!

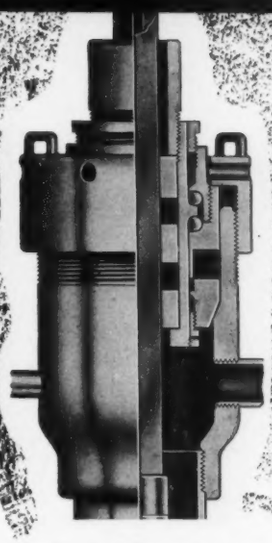
No. 2-OW

Duff-Norton Double Acting Circle Jack for Wrenching and Unwrenching Oil Well Tools.

It's a Good Policy

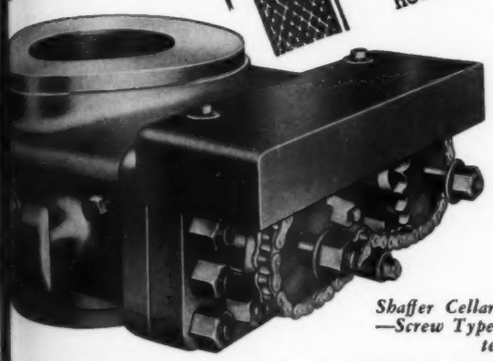
. . . to use SHAFFER "Safety First" High Pressure Drilling Equipment not only to eliminate the dangers of disastrous blow-outs, but to provide modern ease of operation combined with maximum economy in obtaining any desired hook-up.

Read the brief descriptions on this page—then turn to Page 1548 of the 1937 Composite Catalog and check up on this modern control equipment. Or write our nearest office for details included in the large, free Shaffer Catalog for 1937.



SHAFFER ROTATING BLOWOUT PREVENTERS

. . . provide the most efficient method for drilling under pressure, without danger of blow-outs. The rotating packing assembly is carried on two sets of ball bearings, and packs-off around either the Kelly or drill pipe. The well is under complete control at all times—danger of frozen pipe is minimized—proper mud circulation is assured—and gas pockets or high pressure water zones are easily and safely handled.



Shaffer Cellar Control Gate —Screw Type—6000 pounds test.

SHAFFER CELLAR CONTROL GATES

. . . positively close and hold against the highest well pressures, either temporary or for long periods of time. The effective sealing action is accomplished by rams which move together simultaneously when the operating screws are turned either by a Hand Wheel or a Pelton Wheel.

Shaffer Cellar Control Gates require the minimum of vertical space in the cellar—they can be equipped with rams to fit any size drill pipe, casing or tubing that will pass through the bore of the gate—they operate readily under highest pressures—they are of the same superlative quality as all other Shaffer Products.

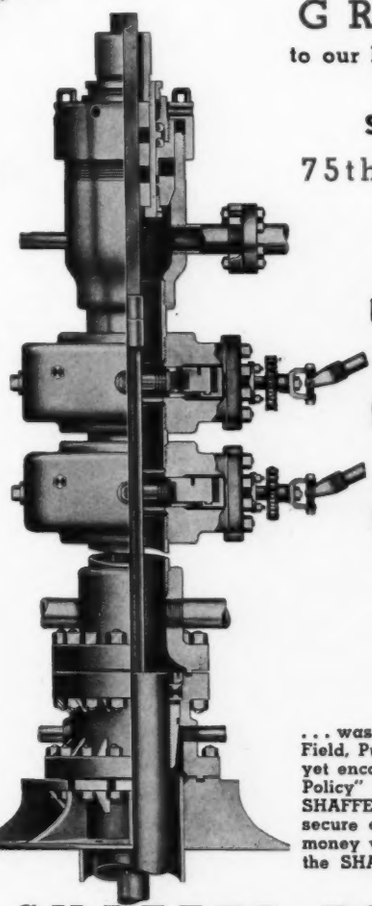
GREETINGS

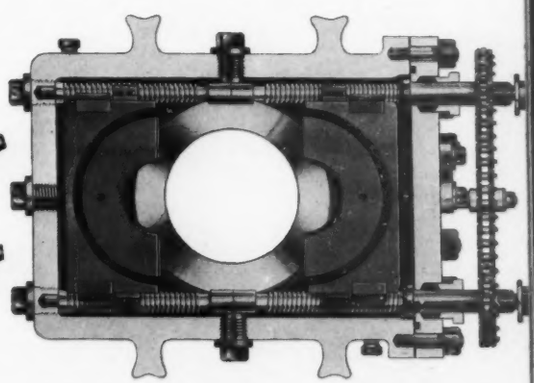
to our Exclusive Export Distributor

OIL WELL SUPPLY COMPANY

on their

75th ANNIVERSARY





Looking down through a Shaffer Cellar Control Gate.

SHAFFER SPOOL TYPE LANDING HEADS

. . . offer a safe means for landing and packing-off strings of casing, by providing these features:

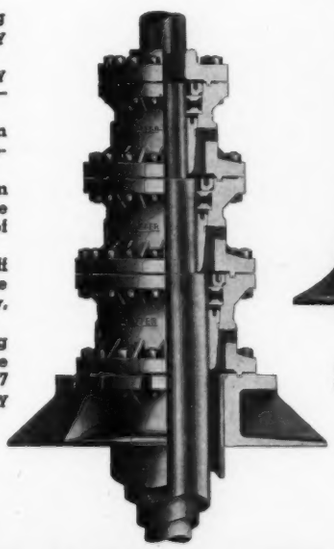
Each string can be landed at any desired point without "letting go"—measuring—or rethreading;

Each string is supported on its own flange, with the upper flange supporting the next string;

Each string is suspended on its own set of slips, which do not support the weight of any subsequent string of casing or tubing;

Each string is securely packed-off against pressure, with provision made for gas outlet, mud line, or overflow, as required.

You will find full descriptions starting on Page 1560 of the 1937 Composite Catalog, and in the Shaffer 1937 Catalog which will be sent promptly upon request.



The four strings of casing are landed and packed-off against pressure with a Shaffer Class A Spool Type Landing Head and Landing Base.

SHAFFER HIGH PRESSURE DRILLING EQUIPMENT

. . . was successfully used on the deep test well in the Khaur Field, Punjab, India, which developed the highest pressures yet encountered. Modern operators realize that "It's a Good Policy" to insure against danger and disaster with a SHAFFER "Safety First" HOOK-UP. Why not write today and secure complete details, recommendations and prices? The money which may be lost due to one blow-out will buy all the SHAFFER CONTROL EQUIPMENT you ever will need!

SHAFFER TOOL WORKS

Brea, California

Santa Fe Springs, Taft and Ventura, California

OKLAHOMA CITY, OKLAHOMA
1129 S. E. 29th Street

HOUSTON, TEXAS
3205 Harrisburg Blvd.

EXPORT REPRESENTATIVES

Oil Well Supply Company, New York, N. Y., U. S. A.

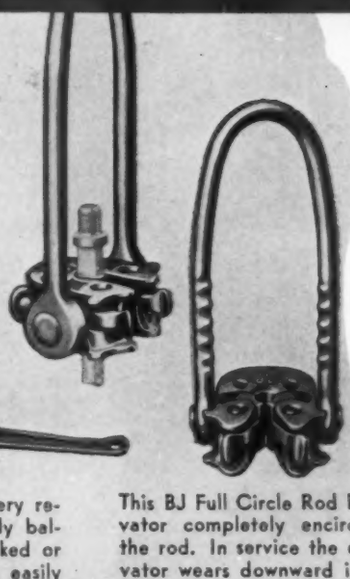
SHAFFER

HIGH PRESSURE DRILLING AND CONTROL EQUIPMENT

FISHING TOOLS THAT EXCEL

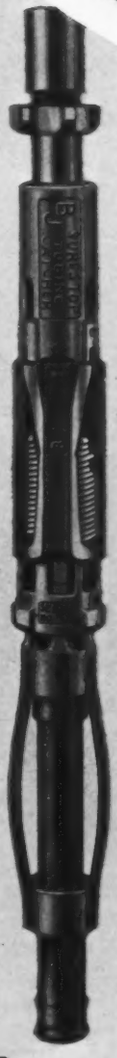
Congratulations + 75th Anniversary

BJ Rod Elevators are made in both Light and Heavy Types to meet all requirements for fast, safe handling. Equipped with front and rear operating latches for ease in handling rods in hangers or on ground. The one-piece body is fully heat treated to withstand hard usage.



BJ Open End Tubing Tong meets every requirement for a light-weight, perfectly balanced tong, which can be easily hooked or "stabbed" on the tubing. It ratchets easily and stays on until released by operator.

This BJ Full Circle Rod Elevator completely encircles the rod. In service the elevator wears downward in a uniform taper. The rod is always suspended in a vertical balanced position, eliminating offside wear and kinking.



The BJ Snapon is a strong, quick-acting tubing tong which completely encircles the tubing and automatically locks in place. A "back-up" feature takes care of cross-threads without removing tong from tubing.

The new "streamlined" BJ "10" Rod Hook is fast and efficient for handling rod strings weighing up to 10 tons. Hand grip at center of balance facilitates opening and closing. The BJ locking arm, when open, serves as a guide for picking up the elevator bail—when closed, transforms the hook into a strong, safe C-link. Made also in a larger size for 15-ton loads.

For loads up to 50 tons use the BJ "50" tubing hook. Equipped with BJ "locking arm" and relief spring. This type hook also available in a larger size with 75-ton capacity.

BJ "20" Rod Hook for operators preferring a spring rod hook—Safe for loads up to 20 tons. The spring action reduces hazard of burred threads and increases handling speed.

The BJ "30"—a strong ball bearing tubing hook for use in short derricks in shallow fields where overhead clearance is important. Has the safe BJ locking arm which converts the hook into a closed C-link and greatly increases its strength.

BJ Surestop Tubing Catcher—the ultimate in tubing safety. Sets instantly and stops tubing without injury to casing tubing or catcher. When equipped with BJ Anchor and set at any desired point it eliminates tubing breathing, with resultant savings on casing and couplings; and enables the stationary pump to take a full stroke.

THE AMERICAN PETROLEUM EQUIPMENT SUPPLIERS' ASSOCIATION MEMBER

BYRON JACKSON CO.

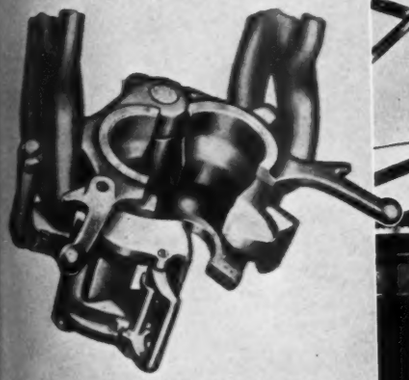
AND SUBSIDIARY

FORT WORTH • LOS ANGELES • NEW YORK

DRILLING TOOLS

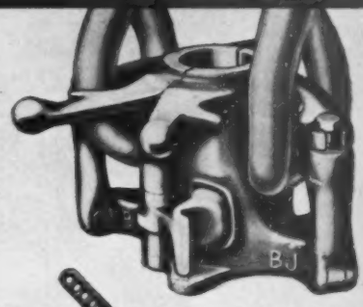
Best Wishes to "OILWELL"

Three separate hooks are combined to give the strength, safety and efficiency afforded by the BJ Triplex Hook. The large lower hook carries the swivel bail in a centrally balanced position, and two upper hooks each take an elevator link. All three hooks have BJ Locking Arms, which form C-links and afford complete safety. One size is for 150 ton loads and the "300" Triplex Hook will safely handle strings of casing or drill pipe of any length.



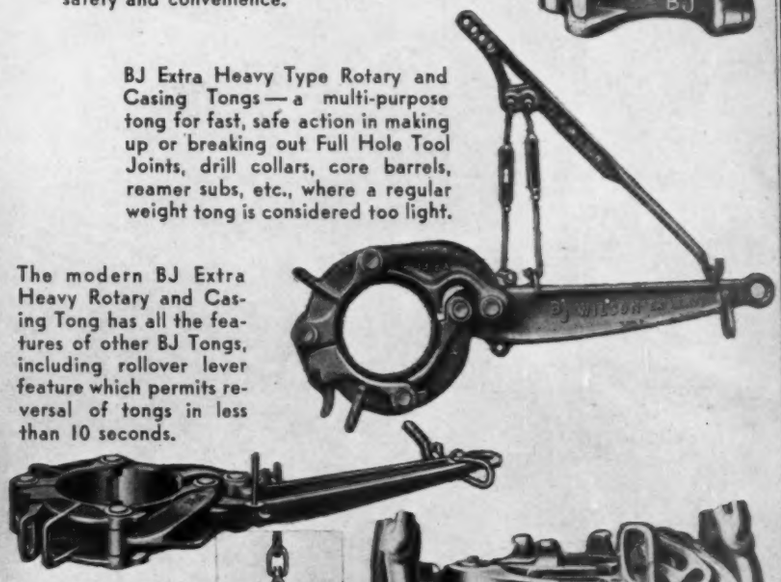
BJ Type G Elevator handles External Upset Drill Pipe rapidly and safely, without using lifting plugs. It will safely carry the longest strings. The bore through the body is of the same contour as the external upset.

Built for long, hard, heavy duty service, the Type A BJ Center Latch Drill Pipe Elevator has a fully heat-treated body which withstands, without upsetting, the pounding effect of tool joints contacted at high speed; a protected latch; long, safe operating handles and many other BJ features of safety and convenience.

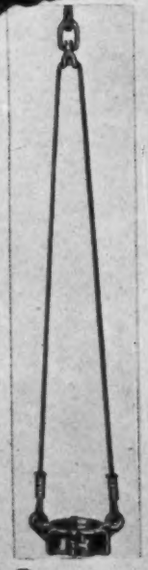


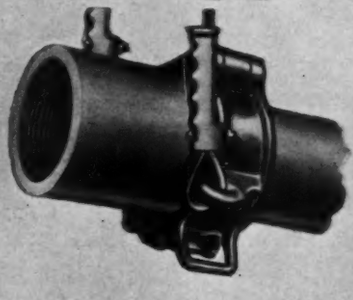
BJ Extra Heavy Type Rotary and Casing Tongs — a multi-purpose tong for fast, safe action in making up or breaking out Full Hole Tool Joints, drill collars, core barrels, reamer subs, etc., where a regular weight tong is considered too light.

The modern BJ Extra Heavy Rotary and Casing Tong has all the features of other BJ Tongs, including rollover lever feature which permits reversal of tongs in less than 10 seconds.

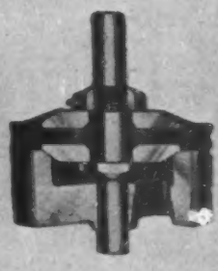


BJ Single Joint Type J Elevator is a recent development for "tailing in" casing and hoisting it in position. Eliminates possibility of a rope sling slipping, or that casing hanging at an angle will be damaged or injury caused to the crew. It is amply strong, swivels easily, hangs true and is light and easy to handle.





BJ Side Door Slip Casing Elevator is designed to handle heavy strings of pipe by means of four long slips, which grip the pipe at any desired point, eliminating any weight being carried by the coupling or collar. It is safe, extremely simple in operation and easy to adjust the balance, so that only one man is needed in the derrick when setting casing.



Use of live rubber insert in the BJ Slush Pump Valve serves to cushion or "absorb" the terrific impact occurring when the valve seats. Positive sealing is also assured and possibility of by-passing eliminated. Valve is completely and quickly reversible without adjustment or replacement of parts.

PRODUCTION TOOLS

HOW'S YOUR I. Q.?

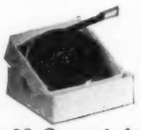
Here's a Good Way to Find Out, and at the Same Time

WIN A VALUABLE PRIZE!

Perhaps you already know the answers to most of the questions below, but if not there are plenty of clues given to help you win a useful prize. All answers can be found in the 1937 Composite Catalog, and in the Baker Catalog which we will gladly send to any oil man.

Any person employed in the Drilling or Production Branches of the Oil Industry is eligible. There is no entry fee—nothing to buy—no special knowledge is required. Just place a check mark opposite the answer you believe to be correct—or write your answer in the space provided. Then cut out this page along the dotted line and mail to the address below. Contest closes at midnight March 31, 1937, and no envelope postmarked after that time can be considered. You may win an extra prize for promptness—see details below.

For 20 Correct Answers You Can Win this Handsome Twin-Deck Set of Bridge Playing Cards.



For 18 or 19 Correct Answers you will Win this Attractive and Useful 5-foot Steel Tape in Nickeled Case—something you will use every day.

EXTRA PRIZES IF YOU ARE PROMPT

If you are one of the First 10 persons sending Correct Answers to all 20 Questions, not only will you receive the Twin Deck set of playing cards, but we will pack them in a handsome leather case with your name gold stamped on cover. It Will Pay you to Start Now, and to Spend Extra Time to Be Sure Your Answers are ALL Correct!

LIST OF CORRECT ANSWERS Will be Published in the April 8, 1937, Issue of the Oil & Gas Journal. Send in your Answers promptly—then watch for this issue to check your I. Q.

Note: This contest is not open to persons residing in states where prize contests are not permitted by law. BUT IF YOU WANT TO TEST YOUR I. Q. go ahead and answer the questions and send in this page. WHETHER YOUR ANSWERS ARE RIGHT OR WRONG we will place your name on our list to receive for the rest of the year 1937 the little booklet called FRIENDLY CHAT, published monthly, which is full of stories, poems and quotations to give you a smile—to bring sunshine into dull days—to make you realize what friends should mean to you, and what your friendship means to others. This offer applies ***only*** if you live in a state whose laws ***will not permit you to compete for prizes.***

ALL READY? . . . HERE ARE THE QUESTIONS!

CUT OFF ON DOTTED LINE AND MAIL TODAY!

1. What large Supply Company is celebrating its 75th Anniversary in 1937?

.....

2. The valve in a "Bakwik" Drill Pipe Float . . .

.....screws into the body
.....is held in place by the tool joint pin
.....locks into a tee-slot

3. Baker Kelly Straighteners operate by

.....steam pressure
.....leverage on a crow bar
.....hydraulic pressure

4. If drill pipe has been twisted off in a cave, what Baker Oil Tool would you find useful?

.....

5. The valve assembly in a Baker Cement Float Shoe is made of . . .

.....concrete .....bakelite
.....cast iron .....brass

6. Name three important uses for the Baker Model F Cement Retainer . . .

a. .....
b. .....
c. .....

7. Cement can be directed upward around the shoe and casing by using a . . .

.....Baker Cable Tool Core Barrel
.....Baker Cement Dump Bailer
.....Baker Cement Whirler Float Shoe
.....Baker Yungling Spiral Guide

8. Cores taken from extremely hard formations with a Baker Cable Tool Core Barrel usually are recovered in what form or shape?

.....

9. What is the purpose of the rubber ring in a Baker Cement Float Collar?

.....

10. If plastered rotary mud prevents a well from coming in easily, what Baker Oil Tool do you need?

.....

11. One of the many successful uses of a Baker Cement Retainer is to . . .

.....enlarge the hole before cementing
.....guide the overshot when fishing
.....straighten drill pipe
.....perform squeeze jobs

12. This core was taken from the side wall of an open hole by using a . . .

.....Baker Cable Tool Core Barrel
.....Baker Wall Hook
.....Baker Wall Sampler
.....Baker Whirler Cementing Collar with Basket

13. What Baker Oil Tool is used to cut formation as shown in this illustration?

.....

14. If you want to retain cement "tailings" inside the casing, what one of these Baker Tools would you use?

.....Baker Cement Retainer
.....Baker Cement Float Collar
.....Bakwik Drill Pipe Float
.....Baker Cleanout Bailer

15. This material was drilled out of a Baker Cement Float Shoe; what is it?

.....

16. The minimum reaming size of a No. 3-A Baker Wall Scraper is 5¾"—what is its maximum reaming size?

.....inches.

17. The valve ball in a Baker Cement Whirler Float Shoe is made of . . .

.....rubber .....cement
.....bakelite .....wood

18. The Canvas Basket Assembly on a Baker Whirler Collar serves to . . .

.....prevent blowouts
.....scrape off rotary mud
.....protect lower oil sands from cement

19. Baker uses concrete in all equipment for guiding, floating and cementing casing, because it is . . .

.....easy to drill up and circulate out of the hole
.....stronger than cast iron
.....cheaper than alloy steel

20. What color concrete is furnished in Baker Cement Equipment to determine the presence in "returns" of material drilled out of the shoe or collar?

.....

BE SURE TO PRINT OR TYPE YOUR NAME AND ADDRESS PLAINLY

My name is.....

I work for the.....**Oil Company**

My position is.....

My street address.....

City.....**State or County**.....

Mail this to . . .

BAKER OIL TOOLS, INC.

P. O. Box 71

HUNTINGTON PARK, CALIFORNIA, U. S. A.

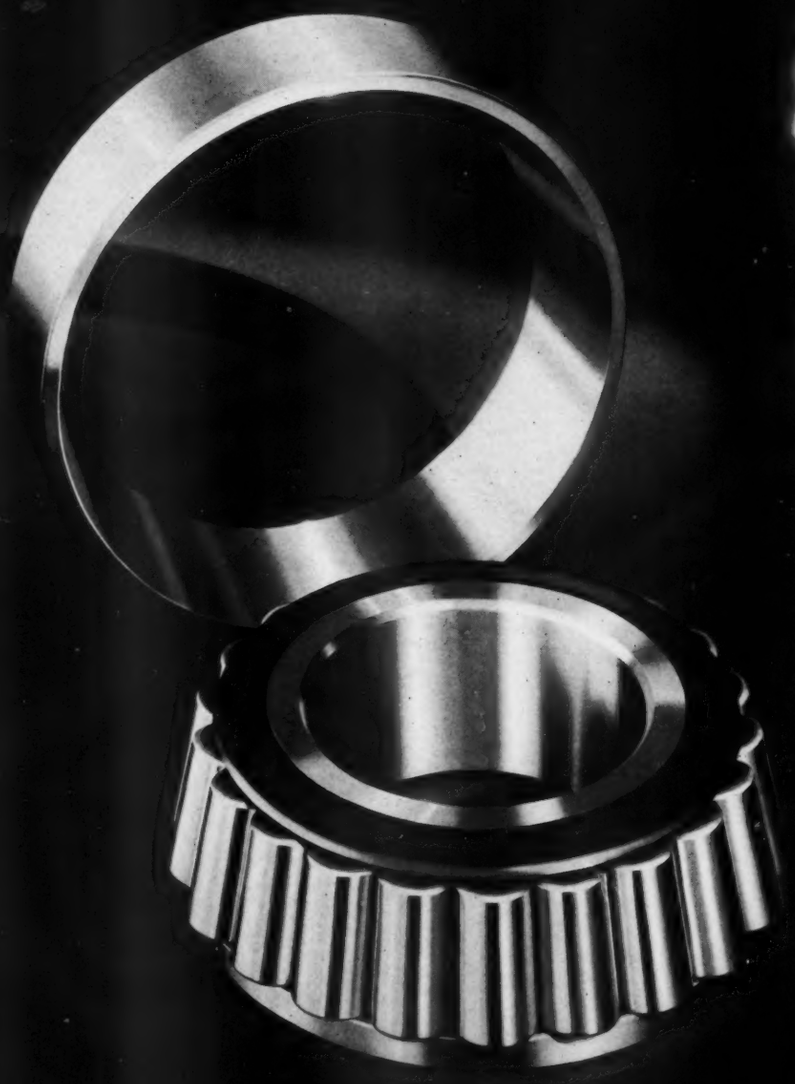
Remember that the correct answers will be published in the Oil & Gas Journal of April 8, 1937—watch for it.

CUT OFF ON DOTTED LINE AND MAIL TODAY!

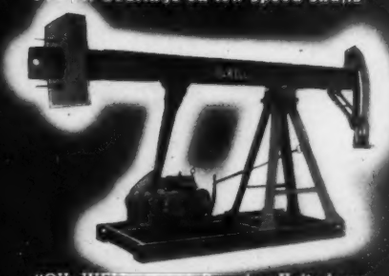
Congratulations OIL WELL SUPPLY CO.

• An institution in operation continuously for 75 years must render a valuable service and maintain its integrity throughout the years. Necessarily its sources of supply must be of similar caliber and responsibility, and the products it sells must sustain its reputation. It is with great pride therefore that we supply a vital part for equipment built by Oil Well Supply Company—equipment essential to modern oil field production.

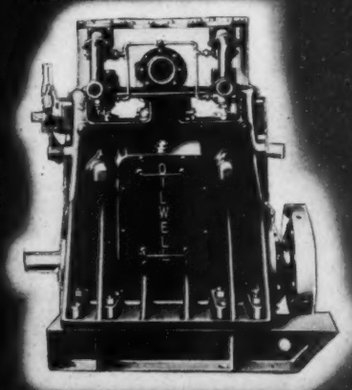
TYSON *Cageless* Tapered Roller Bearings are used in many important OIL WELL products. TYSON bearings are used for heavy duty applications primarily where over-loads are the rule. TYSON bearings have no cage—need none. A full complement of load-carrying rolls increases load capacity at least 30% in any given size. Made of finest alloy bearing steels, forged cups and cones, TYSON bearings offer maximum capacity in any installation. Alignment is positive and permanent—an inherent result of the TYSON double-ribbed cone design (patented). *Send your inquiries to* Tyson Roller Bearing Corporation, 1339 Duncan Road, Massillon, Ohio.



"OIL WELL" Imperial No. 100-SC Single Crank Oilbath Geared Power Units have TYSON bearings on low speed shafts



"OIL WELL" No. 10 Pumping Units have TYSON bearings in the speed reducer and in the lower pitman



"OIL WELL" No. 7 Vertical Twin Cylinder Steam Engines have two TYSON bearings for main bearings on crank shaft

TYSON *Cageless* TAPERED ROLLER BEARINGS

TYSON ROLLER BEARING CORP., Massillon, Ohio

from below 10,000 feet AT OLD OCEAN, TEXAS

Again in the Old Ocean area, Brazoria County, Texas, on Harrison & Abercrombie's No. 3 Bernard River Land & Development Company, a 3-inch Cameron Type "C" Rotary Core Barrel is delivering the facts to the derrick floor. Notwithstanding that considerable hard sand and shale has been encountered, the 3-inch Cameron Core Barrel has cut and recovered between 85% and 90% of all formations cored from 10,036 to 10,307, total depth at this writing.

Above is illustrated the first core cut after 7-inch casing was set at 10,004 feet. Twelve feet of formation was cut between 10,036 and 10,048 feet, and twelve feet of core was recovered as indicated. Replacement of a damaged lower core catcher resulted in full gauge cores being recovered on subsequent runs.

Even in the small 3-inch size, you can absolutely depend on a properly maintained Cameron Type "C" Core Barrel to produce maximum recovery of full and uncontaminated core from any depth.

CAMERON IRON WORKS, INC.

711 MILBY STREET - - HOUSTON, TEXAS

EXPORT OFFICE: 74 TRINITY PLACE, NEW YORK, N. Y.

MIDLAND: W. P. (RED) KNIGHT

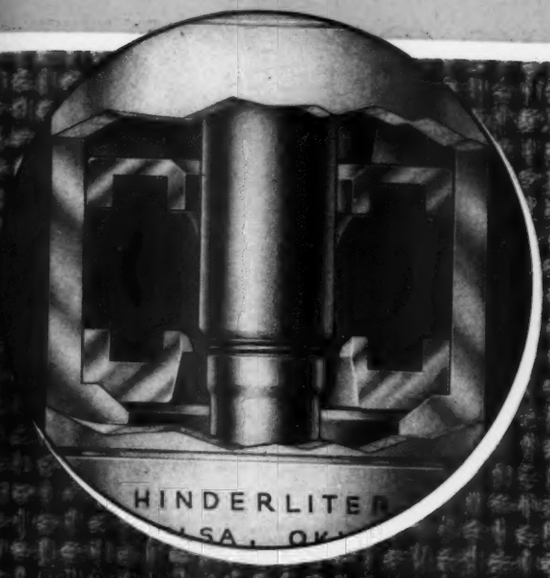
LOUISIANA: PELICAN WELL TOOL & SUPPLY CO.

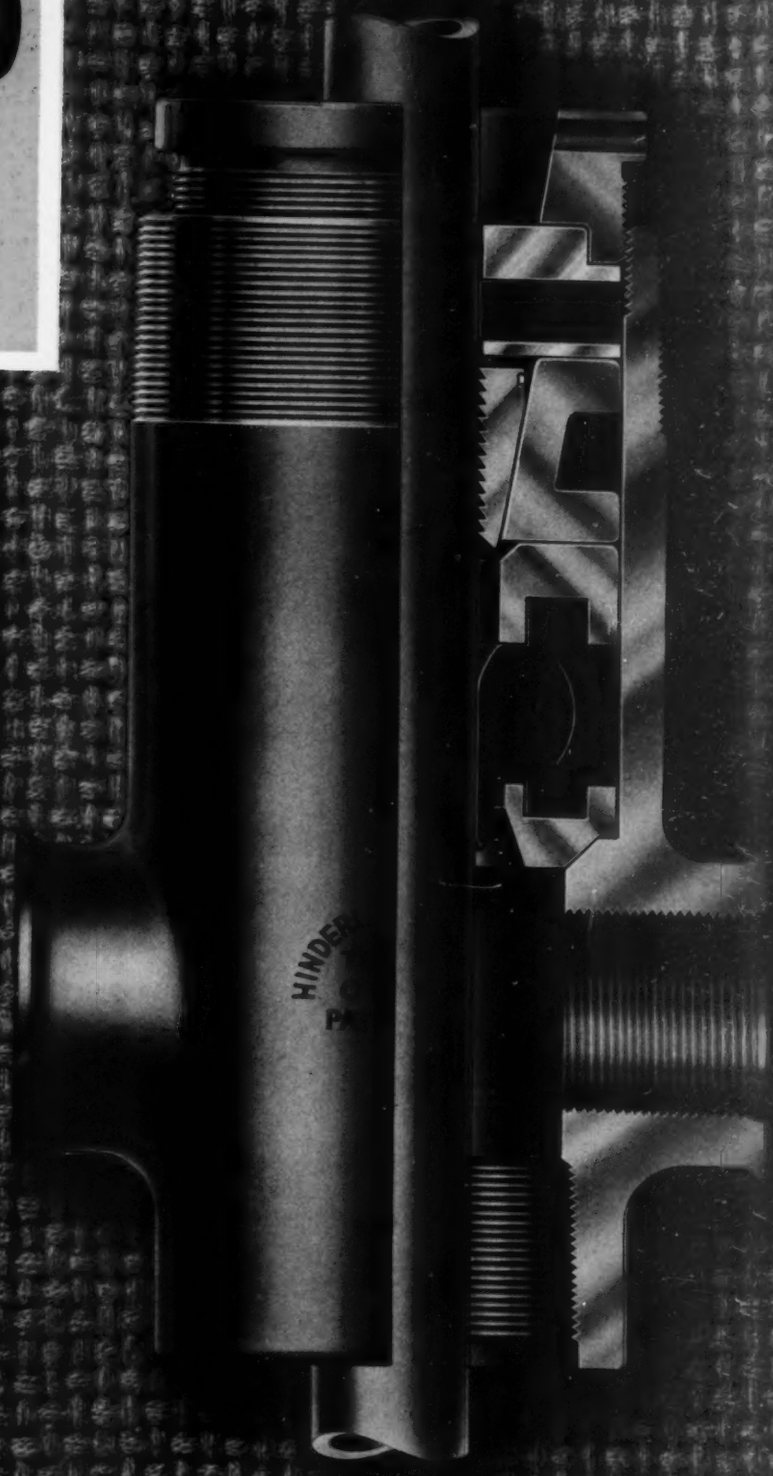
OKLAHOMA AND KANSAS: CARSON MACHINE & SUPPLY CO.

THREE-IN-ONE

CASING HEAD HOOK-UPS

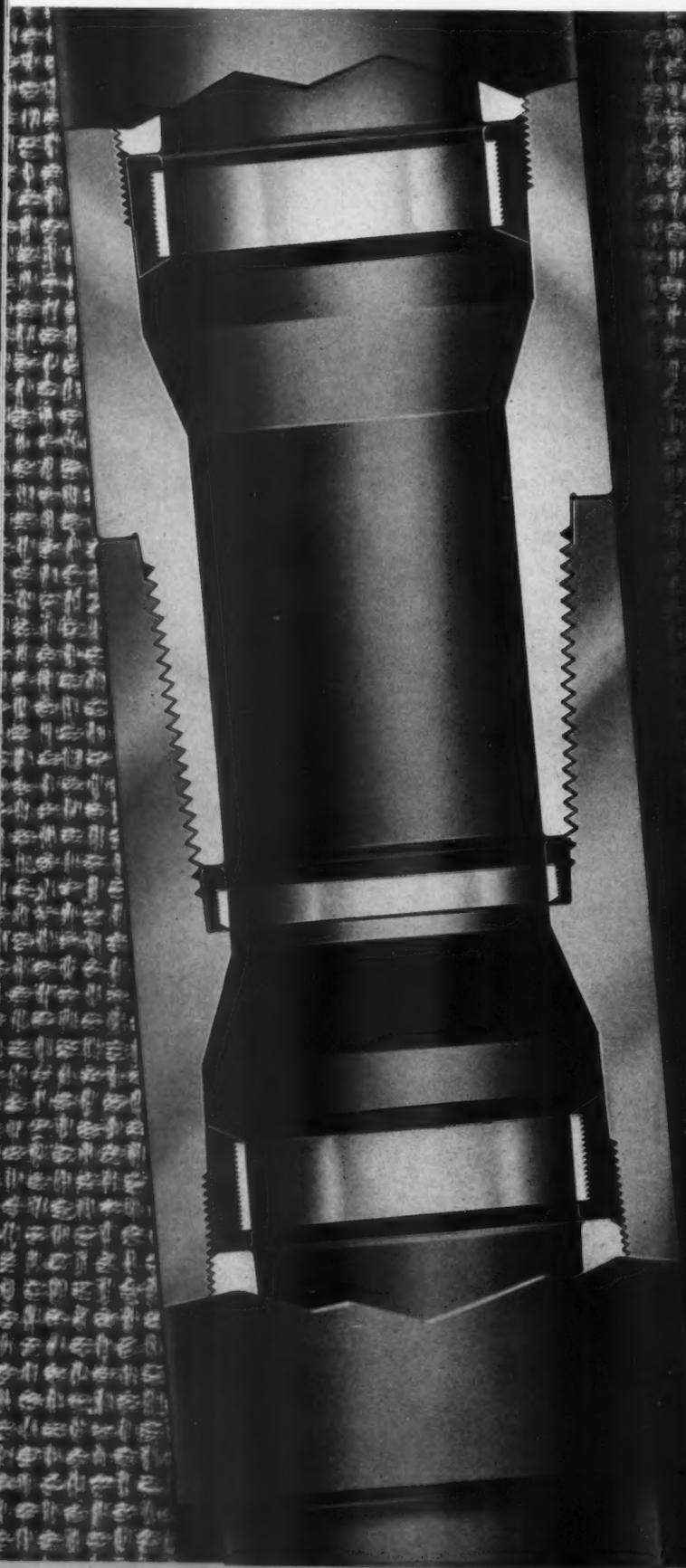
Patented





HINDERLITER

HINDERLITER



ROTARY PACK-OFF TOOL JOINT

Patented

HINDERLITER TOOL CO., TULSA, OKLAHOMA

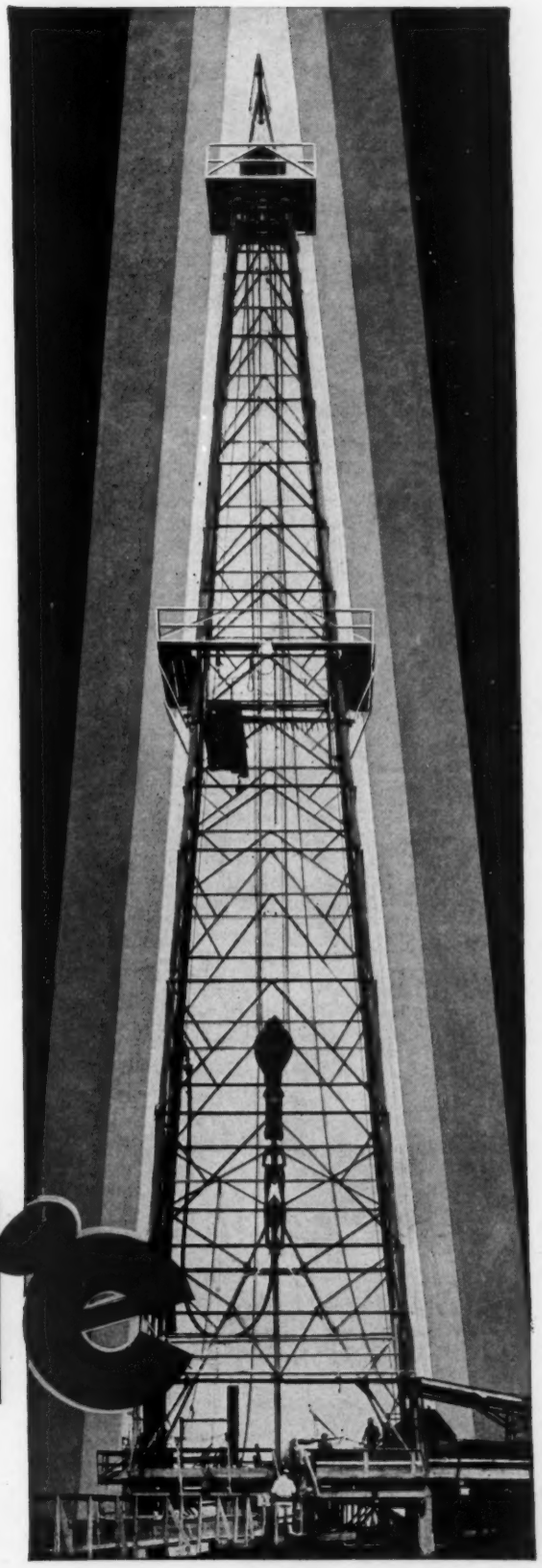
Congratulations

to

Oil Well Supply Company

on 75 Years of Service

to the Oil Industry



DERRICKS

PUMPING EQUIPMENT

Moore

LEE C. MOORE & CO., INC.
TULSA
PITTSBURGH

Distributors of

WALWORTH VALVES AND FITTINGS

for the Petroleum Industry

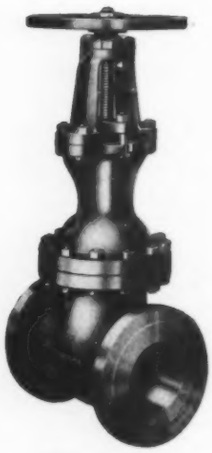
OIL WELL SUPPLY COMPANY

Dallas, Texas

FORGED STEEL UNION

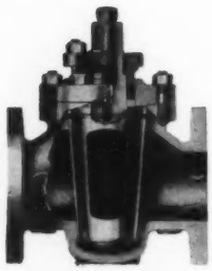
Walworth manufactures a complete line of Bronze, Malleable, Cast Iron and Steel Valves and Fittings for all pressures . . . Also Lubricated Plug Valves and Walco Wrenches.

WALCO WRENCH



STEEL GATE VALVE

IRON BODY GATE VALVE



LUBRICATED PLUG VALVE

SADDLE GATE VALVE

BRONZE GLOBE VALVE

STEEL FLANGED FITTINGS

KEWANEE FLANGE UNION

STANDARD CAST IRON FLANGED FITTING

MALLEABLE IRON FITTINGS

WALWORTH

WALWORTH COMPANY
60 EAST 42nd STREET, NEW YORK

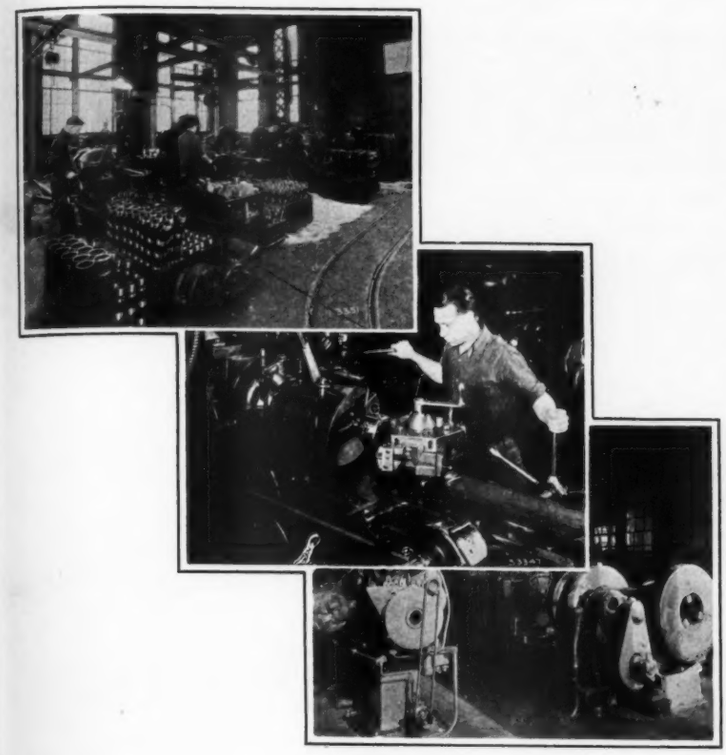
VALVES FITTINGS and TOOLS
Backed by 95 Years' Service

DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT THE WORLD

OIL WELL SUPPLY CO.

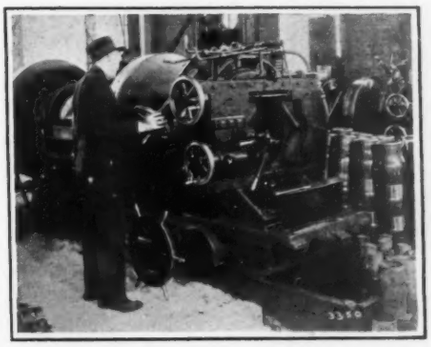
maintains *thread quality*

by using LANDIS



JUST as the individual is known by the company he keeps, so is equipment known by its list of users.

It has always been a source of profound satisfaction to acknowledge the general—and in many cases—exclusive, usage of LANDIS equipment in the manufacturing plants and various branches of the Oil Well Supply Co. Such acceptance is gained only by building a quality product, by giving honest service and by fair dealing.

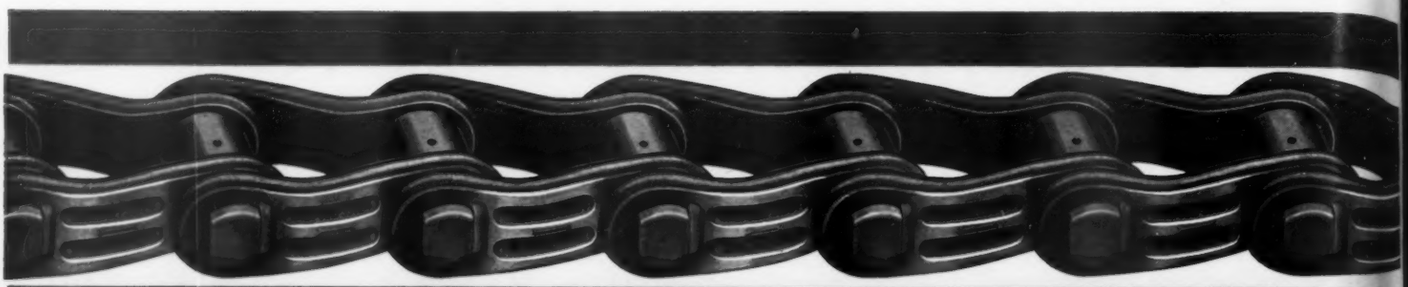


LANDIS Threading Equipment is used by Oil Well Supply Co. from Coast to Coast.

LANDIS MACHINE COMPANY, Inc., Waynesboro, Penna., U. S. A.

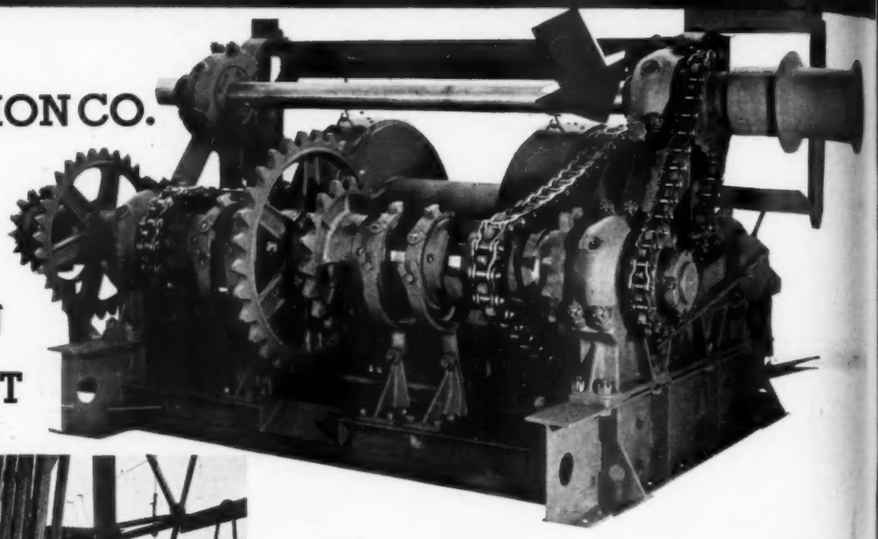
REPRESENTED IN THE DOMESTIC OIL FIELDS BY:

Colcord-Wright Machinery & Supply Co., St. Louis, Mo.; D. S. Mair Machinery Corp., Houston and Dallas, Texas; Murray, Baker, Frederic, Inc., New Orleans, La.; Moore Machinery Co., San Francisco and Los Angeles, Calif.; Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.



9575 ft. OF SMOOTH DRILLING

by
HAMMAN EXPLORATION CO.
at
BAY CITY, TEXAS
with
THE LAST WORD IN DRILLING EQUIPMENT



ANOTHER deep Gulf Coast field is under development . . . and another all Hyper Chain job rings the bell for smooth, dependable performance. It's Hamman Exploration Company's J. H. Crooker et al. No. 1, second hole at Bay City, Texas, which hit the pay at nearly two miles in 55 days' drilling time, despite cautious procedure to watch likely formations.

To the left is pictured the complete Oil-well rig with the new No. 7-P Hoist that drilled the job. This modern unitized hoist is equipped with all Hyper Chain (SS-124 3-bar Hyper and SS-40 Hyper) and with Link-Belt cut-tooth alloy-steel, heat-treated sprockets. Above is presented the Oil-well unit as photographed at the plant, before the chain guards were mounted.

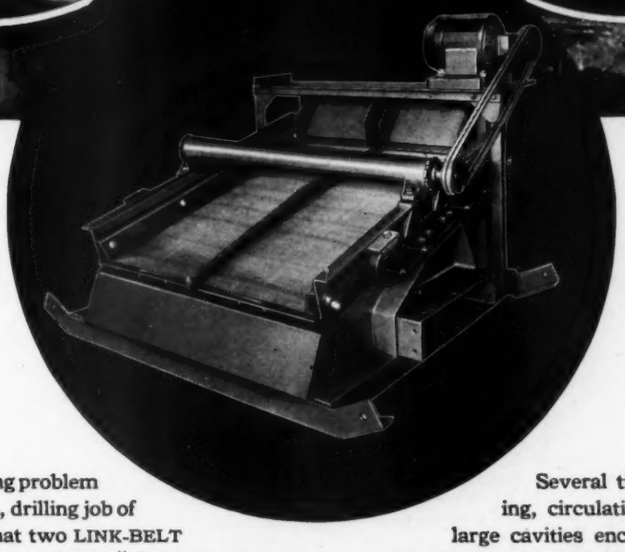
Link-Belt Company, Philadelphia, Indianapolis, Chicago, Los Angeles, New York, Houston, Dallas, or Oklahoma City (W. H. Abele, Box 305, Route 4).

5970

LINK-BELT CHAINS

Dual Control of An Abnormal Mud Problem

With this LINK-BELT Twin-Screen Hook-Up



Cron & Gracey find that LINK-BELT mud screens quickly pay for themselves

So abnormal was the circulating problem on this deep St. Martinville, La., drilling job of Cron & Gracey, contractors, that two LINK-BELT Vibrating Screens were installed as a double "shaker" hook-up.

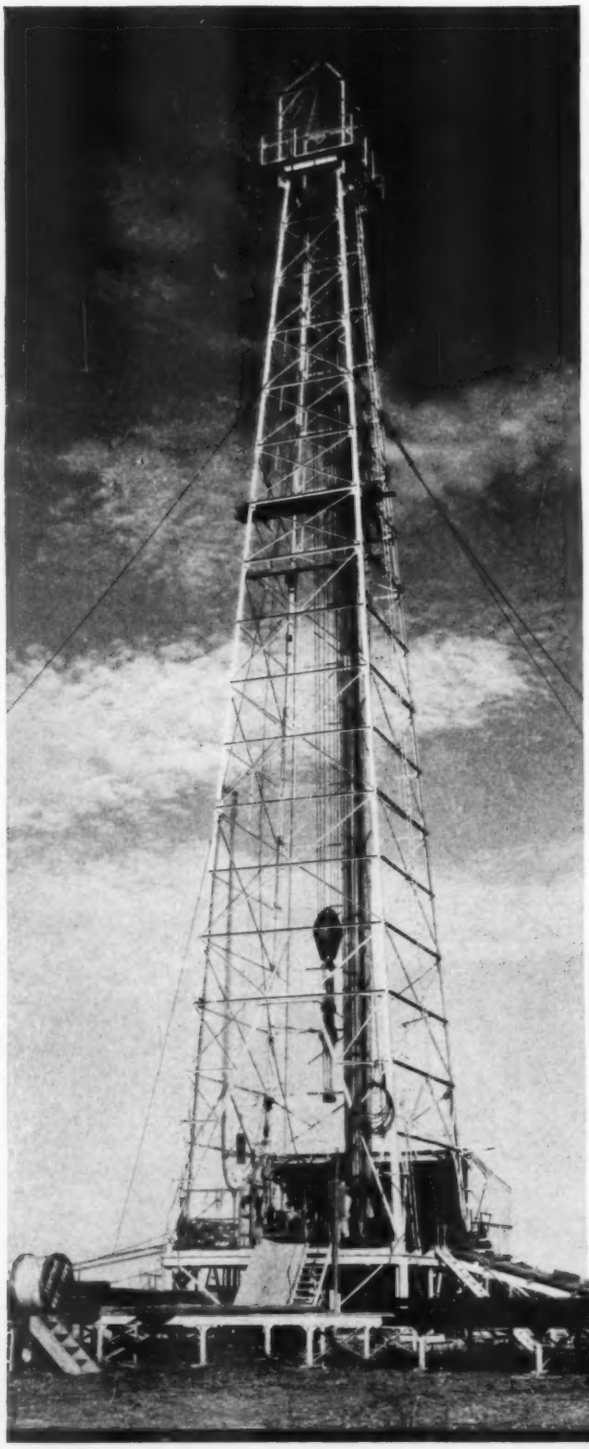
First, the volume of fluid necessary for circulation required 15½ x 8½ x 20 inch slush pumps, using 8¼ inch liners. At 60 strokes per minute the slush volume was 580 gallons per minute. Average steam pressure maintained was 350 pounds, with the pumps working under about 1200 pounds pressure. Weight of the mud averaged 11.4 pounds, with a viscosity ranging from 26 to 34.

Several times during the course of drilling, circulation was lost due to unusually large cavities encountered, which resulted in the use of sawdust, sugar cane pulp and cotton seed hulls. During the time the mud system was saturated with these materials, the screens were "detoured," but they served very profitaby in cleaning up the mud and putting it back in condition after cavities were filled and normal drilling was resumed.

Send for Folder No. 1672. Address Link-Belt Company, Philadelphia, Chicago, Los Angeles, New York, Dallas, Houston, or Oklahoma City (W. H. Abele, Box 305, Route 4.) 5078

LINK-BELT SCREEN

For Safety and Economy Specify



ALL STEEL- ALL PARKERSBURG

The operator who owns the "set-up" at the left is strong for safety, economy and quality. That's why everything is all steel from grillage to gin pole . . . and all Parkersburg. Ten years from today it will be as good as new . . . and because steel equipment is 100% salvable every piece of it will still be on the job. It will also have saved hundreds of dollars in excavating and replacement costs.

Why not start now and switch to all steel and all Parkersburg equipment. Let your record of operating costs prove the wisdom of it . . . just as they have for other progressive operators all over the country.

The first step is to get in touch with your nearest Parkersburg representative . . . he is no farther away than your telephone and will be glad to give you full details. Call him today and be ready for your next location.

●

A typical all steel outfit consists of Derrick, Substructure and Stairways, grillage beams, pipe rack and pipe ramp, engine support with skids and platform and loading ramp. Typical layouts are shown in catalog MS-6-36. Ask your Parkersburg representative for a copy.

THE PARKERSBURG RIG & REEL COMPANY
PARKERSBURG, W. VA.
Branches in all active fields
Dallas . . Houston . . Tulsa . . Los Angeles . . New York

●

Photo shows All Steel Drilling assembly in Saxet Field, South Texas

Our Congratulations

TO THE OIL WELL SUPPLY COMPANY

FIG. 101—HERCULES Type B Forged Steel "Over-Packed" Casing Head with Slips

The Hercules Tool Company wishes to congratulate the Oil Well Supply Company on the anniversary marking its 75th year of oil industry service.

HERCULES patented oil well specialties have been distributed by the Oil Well Supply Company ever since they were first introduced, in 1924. At that time we pioneered a new mechanical idea—the HERCULES "Overhead-Packing" arrangement for well head connections. We appreciate the fact that the Oil Well Supply Company was among the first to recognize the value of "Overhead-Packing", and thus played an important part in bringing our products to the attention of the oil industry.

Today, the Oil Well Supply Company distributes our general line of products, which includes: all types of HERCULES "Overhead-Packed" Casing Heads, Tubing Heads, Tubing Hangers and Flow Heads; our Upset Thread Pumping and Flowing Tees, Tubing Anchors, Globe-Relief Valves and Engine-Control Valves.

Throughout our 13 years' existence as a manufacturer we have enjoyed most pleasant relations with the Oil Well Supply Company. We are proud of our association with this great organization.

HERCULES TOOL COMPANY

General Offices: Kennedy Bldg., Tulsa, Okla., Box 286, Phone 3-9158.
District Office: Fair Bldg., Fort Worth, Texas, Box 954, Phone 2-7028
Cable Address: HERTOCO

FIG. 103—HERCULES Type A Cast Steel "Overhead-Packed" Casing Head with Slips

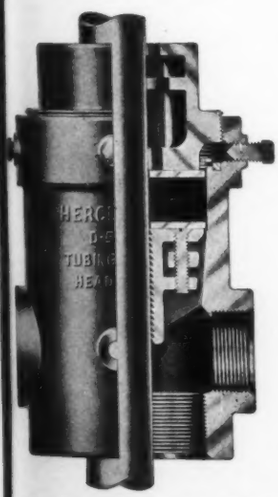


FIG. 209—HERCULES Type D-5 "Overhead-Packed" Tubing Head with Slips

Fig. 215—HERCULES Globe-Relief Valve

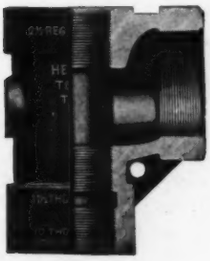


Fig. 217 — HERCULES Upset Thread Pumping and Flowing Tee.

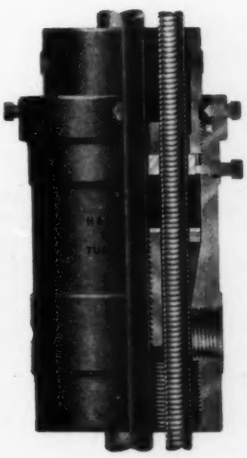


Fig. 210—HERCULES Type R Tubing Head with Slips and Conduit for Electric Cable.

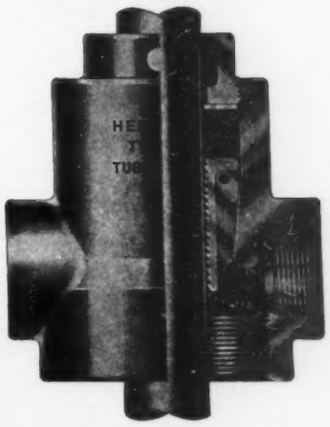


FIG. 208—HERCULES Type D-4 "Overhead-Packed" Tubing Head with Slips

See HERCULES Section, 1937 Composite Catalog, Pages 797 to 800 inclusive.

HERCULES TOOL TULSA

HERCULES

OIL WELL SPECIALTIES

Wilson

A 10,000 foot rig with smaller model Wilson rigs with many new features

Here's how the Wilson Titan Rig used by J. G. Hammond, Inc., of Ft. Worth, Texas, looked in actual operation. Note its rugged appearance and compact clean cut design.

It's amazing . . . the power, speed and dependability of Wilson's Titan Rigs. On every job where they have been used, and in less than a year's actual operation, they have proved they can do the work of equipment costing 2 to 3 times as much!

For example, this is what Mr. J. G. Hammond, drilling contractor of Ft. Worth, Texas, has to say about his Wilson Titan Rig used to drill 6800 feet of 11" hole in section 24, 2N-3W, Garvin County, Oklahoma. "With Speed comparable to the Largest Steam Rigs, and with large savings in fuel, water, transportation, rigging-up and other costs, we consider this the best rig we know of for deep drilling."

Extremely compact and rugged, the Wilson Titan Rig provides these superior features: Wilson Chain Drive Transmission which transmits 35% more power to the point-of-action; New Improved Master Clutch; Circulating Type Water Cooled Brakes; Dual Engines with Oil Bath Chain Connecting Drive; Friction and Jaw Clutch on Drum Final Drive; these and other exclusive features combine to make Wilson the Outstanding Portable Rig.

CONGRATULATIONS "OILWELL" ON YOUR 75th ANNIVERSARY ! !

Oil Well is exclusive Export, Rocky Mountain and Pacific Coast Distributor for Wilson Products.

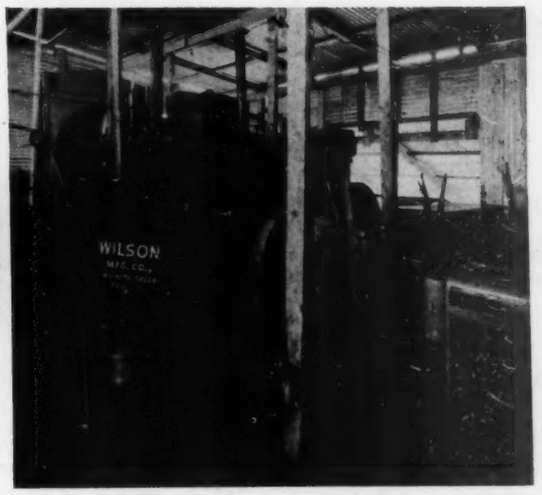
TITAN RIG

all the features that have made the the accepted leaders in their field, and

• • •

Equipped with 2 Wilson Six 350 H. P. Engines. Successfully Completes 6,800 ft. of 11-inch Hole, using 6-inch Drill Pipe weighing over 200,000 lbs. —or within 8% of Heaviest String of Drill Pipe Ever Run in a Hole!!

At right is shown the V-Belt drive, with dual pump countershaft which enables the use of two pumps simultaneously or in the event of failure in one pump the other can be substituted within a few seconds without loss of drilling time.



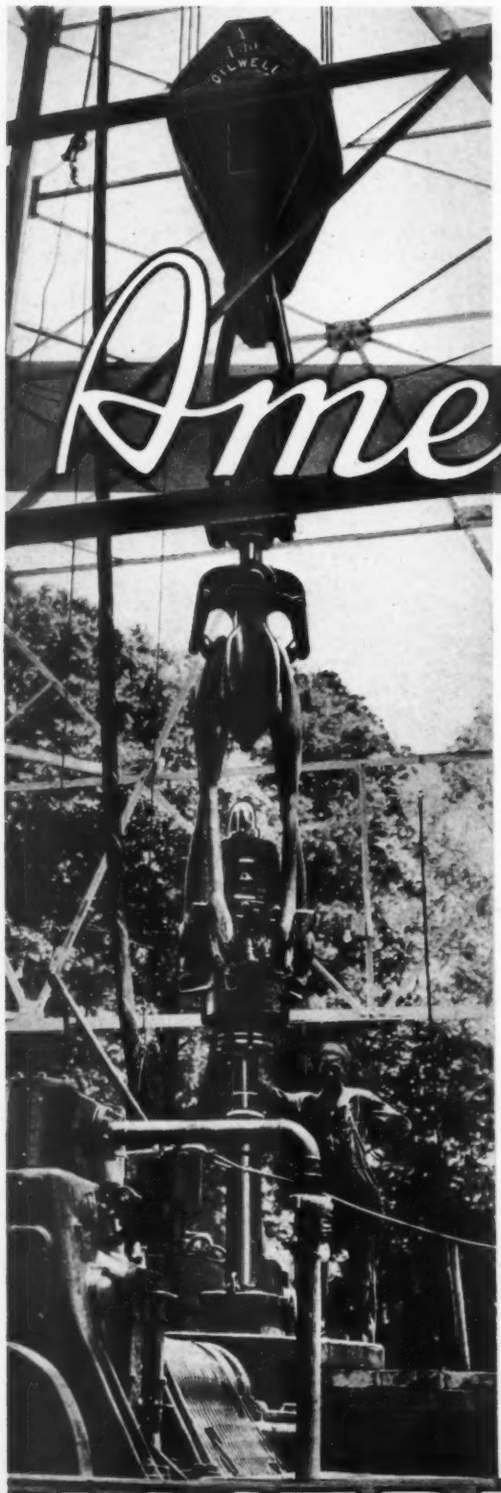
The Wilson Six engines, with which this Titan Rig is powered, have now been field proven with nearly a year of actual operation. The performances of these engines on 3 Wilson Titan Rigs used during this period has been little short of phenomenal.

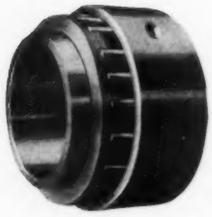
The Wilson Six engines are built especially for rotary rig service, and have outstanding modern features not found in any other make of engine. Built in both 4 and 6 cylinder models, 230 and 350 Horse Power. Write for bulletin describing the many advantages of Wilson Engines.

At the left is a camera view showing the New Wilson-Snyder 20- P, 7¾" x 20" pump, successfully operated by Wilson-6 engines. To the best of our knowledge, this is the largest internal combustion powered pump ever to be used in rotary drilling.

Wilson
MANUFACTURING COMPANY

WILSON PORTABLE RIGS AND OIL FIELD WINCHES





Americans

WHERE REAL STAMINA COUNTS, "OILWELL" STANDARDIZES ON AMERICAN ROLLER BEARINGS

American Heavy Duty Roller Bearings *dominate* in the oil industry! For the past 15 years, Oil Well Supply Company has specified Americans for draw works, crown blocks, swivels, traveling blocks, rotaries, and drilling control units. Thirty other manufacturers use these rugged bearings as standard in their heaviest-duty drilling equipment.

Americans are specialized bearings—designed for the oil fields—built for the hard jobs. They are made of the finest bearing steel known to the industry. They reduce friction and power loss to an absolute minimum. Simple, compact, and easy to install, they never need further adjustment.

Find out for yourself why not one American Bearing installation has ever been abandoned. Ask for our assistance on every bearing problem.

THE AMERICAN ROLLER BEARING COMPANY
Pittsburgh, Pa.

Pacific Coast Office: 321 W. Pico, St., Los Angeles, California.

AMERICAN HEAVY DUTY

"OILWELL"
"OILWELL"
"OILWELL"
for the HARD JOBS!
OILWELL
"OILWELL"
ROLLER BEARINGS

SAFETY – STRENGTH – SERVICE

THE proven Superiority of McKissick's Products is due to their actual patented designs which include added measures for Safety, Strength and Service. Economize through Long, Safe, Efficient operation with McKissick Products.

TUBING CATCHER

Positively and automatically functions under all conditions found in handling tubing in modern deep wells. Sufficient clearance of both head and slips, ample fluid courses and short overall length. Extra large slips distribute the shock load over a greater area, and the slip rest acts as a guide as well as fluid protector. The McKissick-Anchor Attachment positively anchors or releases tubing by simply a half turn rotation of the tubing.

TUBING BLOCK

Constructed of steel throughout, the sheave is machined to line size and equipped with Alemite grease cup and oil reservoir which supplies automatic lubrication, affording longer life to the bearings. The block is threaded at all times without removal of guard plates, assuring your men *permanent* safety, combined with operating ease and efficiency. McKissick Ball Bearing Universal Swivel Becket used with the tubing block gives compact, simple combination of block, swivel, and tubing hook.

INDUSTRIAL TYPE SNATCH BLOCKS

Were designed for general duty and may be used for all types of work where a light weight snatch block is called upon for heavy duty.

One of the outstanding features is the patented Swivel Hook which permits insertion of the line without removing hook. It is so constructed that both side plates are solid and supported by cross bolts to prevent spreading under a load. (Note illustration.)

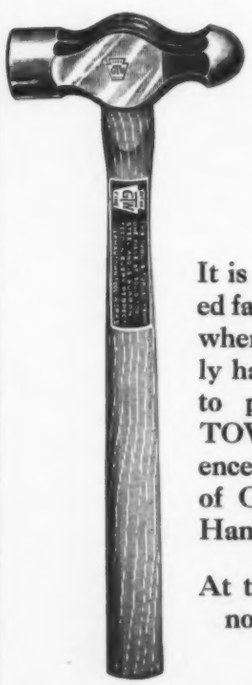
Other superior features of the McKissick Industrial Snatch Blocks are:

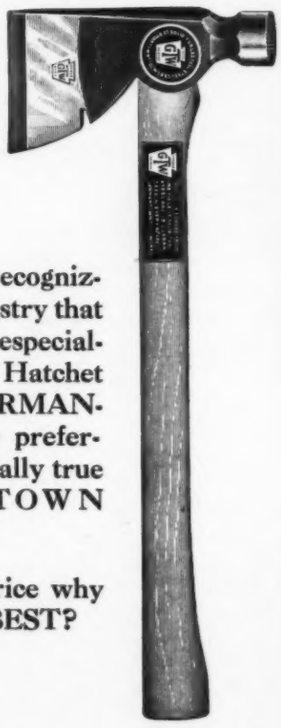
1. Light in weight.
2. Steel Swivel Hook or Swivel Becket, Interchangeable.
3. Steel sheaves.
4. High Speed Bronze bushings, or Hyatt Roller Bearings.
5. 1½" Hollow sheave pin.
6. Alemite Lubrication.
7. Operates in all positions.
8. Interchangeable parts.

[AVAILABLE THROUGH YOUR NEAREST SUPPLY STORE — SPECIFY McKISSICK PRODUCTS]

MANUFACTURED BY

McKISSICK PRODUCTS CORP.
TULSA, OKLA.



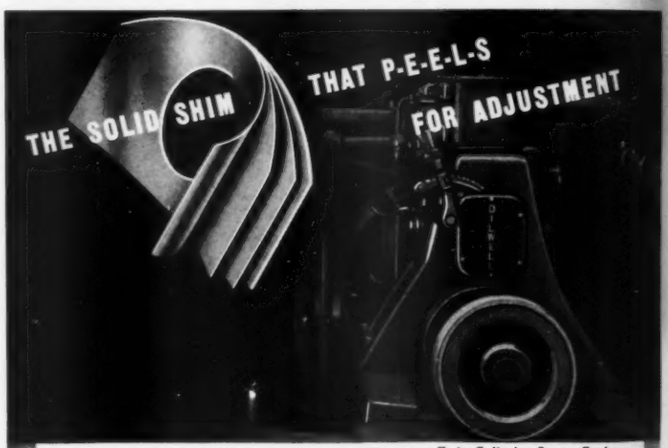


It is a generally recognized fact in the Industry that where there is an especially hard job for a Hatchet to perform GERMANTOWN gets the preference. This is equally true of GERMANTOWN Hammers.

At the SAME price why not have the BEST?

Griffith Tool Works

520 Commerce Street — Philadelphia, Pa.



"OILWELL" Twin-Cylinder Steam Engine

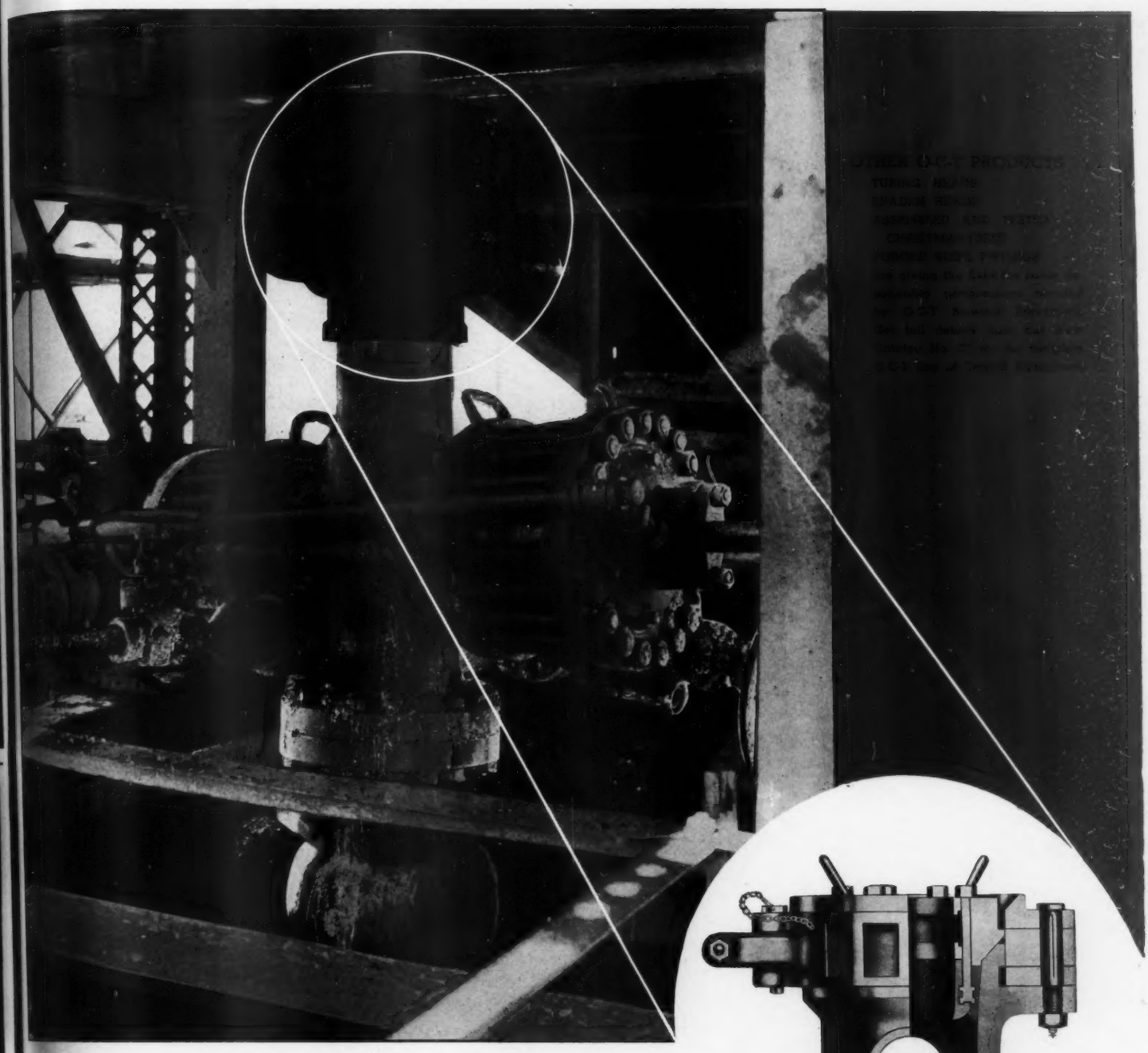
for crank pin bearings,
eccentric straps, etc.

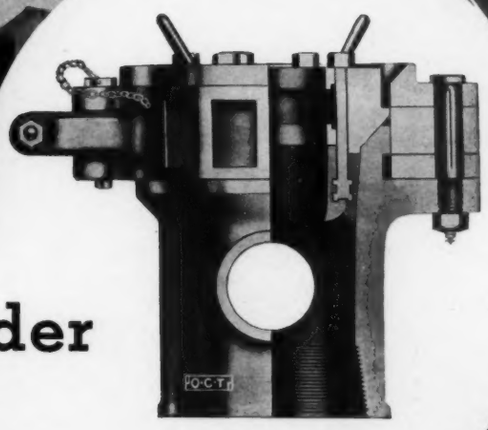
LAMINUM SHIMS provide accurate adjustments . . . Right at the machine! Simply p-e-e-l one or more .003" laminations at a time from the solid brass shim. Production delays avoided . . . No filing, no grinding . . . • The same economy, the same precision in factory assembly and in every service adjustment for the life of the bearings.

LAMINATED SHIM CO., INC., 22-54 44th Ave., Long Island City, N.Y.
Cleveland Detroit Milwaukee

814

LAMINUM
Precision adjustment SHIMS





There's DOUBLE-SAFETY under THIS DERRICK FLOOR

The OCT Type "D" Above this Ram Type Makes an unbeatable Blowout Preventer Combination

This combination blowout preventer hook-up is rapidly becoming familiar throughout high-pressure areas of the oil country.

With complete safety, while circulating through the closed O-C-T Type "D" Preventer to kill kicking well pressure, drill pipe may be rotated continuously, and raised and lowered continuously to prevent sticking. If desired or necessary, drill pipe may be lowered back to bottom to "heavy-up" the full column of drilling fluid.

In event of a blowout, rams of the pressure operated ram-type preventer are closed. Pack-off of the O-C-T Type "D" Preventer is then inserted in the preventer body, and rams of the ram-type preventer opened. All wear is concentrated on the pack-off of the O-C-T Type "D" Preventer.

In event of necessity to change this pack-off, which can be done in very few minutes, rams of the ram-type preventer are closed to hold well pressure while the change-over is made.

O-C-T Pack-offs are made for drill pipe, tubing or casing, either standard or flush joint. Collars or tool joints pass through the O-C-T Pack-offs without loss of pressure.

Four types of O-C-T Blowout Preventers enable you to meet every condition encountered in today's drilling. Parts for all four types are interchangeable, eliminating the necessity of a separate supply of parts for each type.

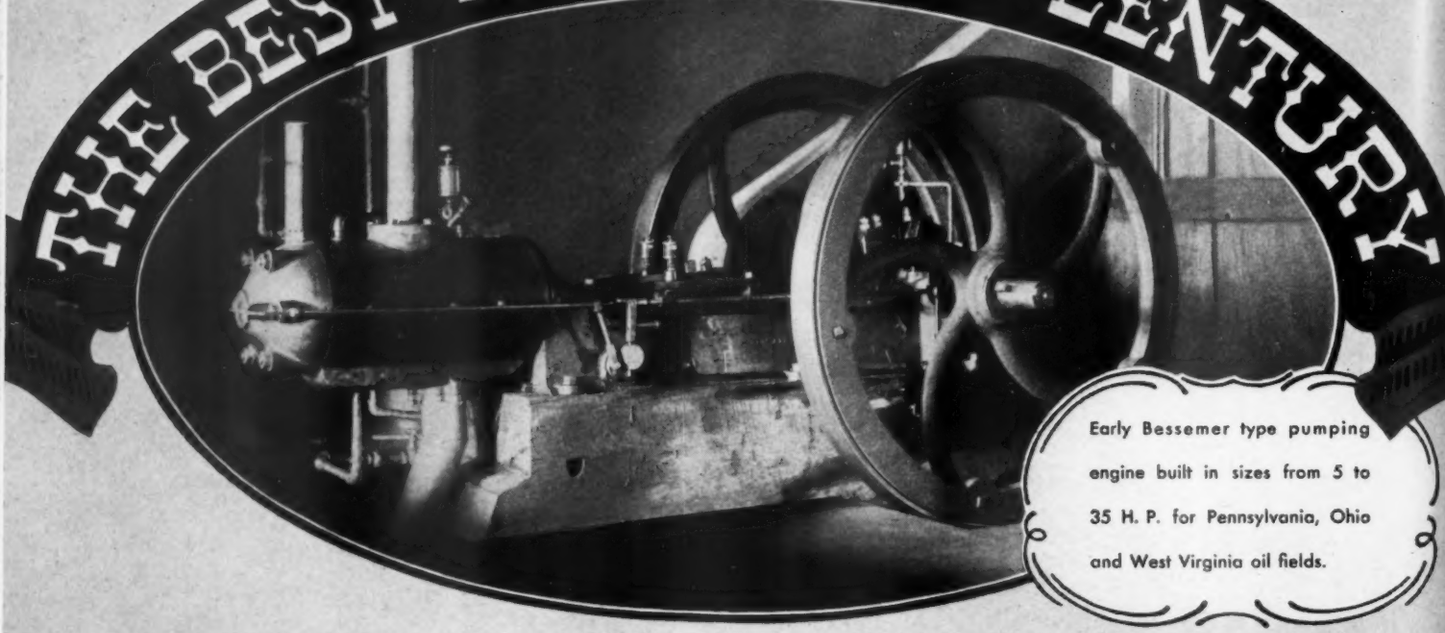
Full details covering the O-C-T Preventer Line will be mailed to you on request.

Patented:
1902097; 1997152

OIL CENTER TOOL CO.
QUALITY O·C·T PRODUCTS
HOUSTON, TEXAS, U.S.A.
CABLE ADDRESS "OCENTOL"

DEPARTMENT OF GEOGRAPHY

THE BEST IN THE 19th CENTURY



Early Bessemer type pumping engine built in sizes from 5 to 35 H. P. for Pennsylvania, Ohio and West Virginia oil fields.

ORIGINALLY a builder of steam engines, Cooper-Bessemer began designing gas engines to eliminate the steam boiler and save fuel. The line now includes low speed horizontal gas engines, both two and four-cycle types; direct gas engine driven compressors, both low and high speed vertical multi-cylinder gas and Diesel engines and large double-acting gas engines. Sizes range from 15 to 1600 H. P. for practically every oil and gas industry requirement.

A growing outlet for oil-field products is furnished by the many Cooper-Bessemer Diesels that serve industrial plants and marine craft everywhere.

1833 1937

THE BEST IN THE 20th CENTURY

Modern Cooper-Bessemer type G-AO pumping engine, sold as 45 H. P. actually develops 64 H. P. at 200 revolutions and 98 H. P. at 300 revolutions.

Type G-AU, 60 to 110 H. P.

Type G-AW, 100 to 150 H. P.

Used for driving water pumps, central pumping powers and electric generators.

THE COOPER-BESSEMER CORPORATION

Mount Vernon, Ohio — PLANTS — Grove City, Pennsylvania

25 West 43rd Street, New York City
Mills Building, Washington, D. C.
640 East 61st Street, Los Angeles, Calif.
201 East 1st Street, Tulsa, Oklahoma
631 Spring Street, Shreveport, La.
Magnolia Building, Dallas, Texas
Esperson Building, Houston, Texas

CHIKSAN BALL BEARING SWING JOINTS INSURE GREATER EASE & ECONOMY OF OPERATION!!!

HERE'S WHY

● The installation of Chiksan Ball Bearing Swing Joints (for both high and low pressure work) is an investment that will bring greater profits and more satisfactory operation for years to come. One Chiksan Joint will convince you of the superiority of this truly modern equipment.

LIGHTWEIGHT Superior design, better packing sets and the lightest of material (consistent with strength and safety) make Chiksan Joints and Hose lighter than conventional types and other makes. Oil men everywhere appreciate the greater ease of handling which lighter weight provides.

360° TURNS Chiksan Ball Bearing Swing Joints are regularly manufactured in one, two and three swivel movements—insuring free, easy, continuous movements in any desired direction. For example: the Chiksan All-Steel Rotary Hose has seven joints and 17 movements which allows perfect 360 degree "swing". Two rows of ball bearings on each swivel adds greatly to the flexibility of all Chiksan Swing Joints.

ALL METAL CONSTRUCTION Only the best grades of steel, malleable iron and special heat-treated aluminum alloys are used in the manufacture of Chiksan Ball Bearing Swing Joints. All parts, joints and hose assemblies are thoroughly tested. All metal construction with its inherent greater strength, longer life and lower upkeep make Chiksan Hose and Joints permanent equipment. Why spend your Joint and Hose money for perishable tools when you can buy permanent equipment?

PATENTED PACKING SETS The Chiksan Patented Packing Unit consists of three parts. The sealing is accomplished by a Duprene ring which fits snugly within an outer metal ring and is held firmly in place by an inner metal ring. The packing unit and all moving parts are lubricated by Alemite. No adjustments are required. The superior design of the Chiksan packing unit provides a positive seal and eliminates leakage problems.

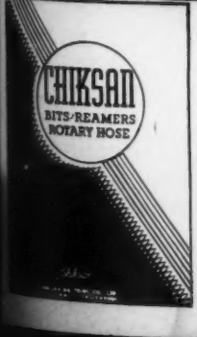
All Chiksan Products Are Sold By Oil Well Supply Co.

● Our engineers will be glad to submit information and designs for applications where flexible joints are desired. Write for our New Rotary Hose folder and new Swing Joint Folder.

Chiksan

CHIKSAN OIL TOOL CO. LIMITED

FULLERTON, CALIFORNIA — GULF ENGINEERS INC., HOUSTON, TEXAS



PLEASE SEND FREE FOLDER

☐ CHIKSAN SWING JOINTS

☐ CHIKSAN DRILLING TOOLS

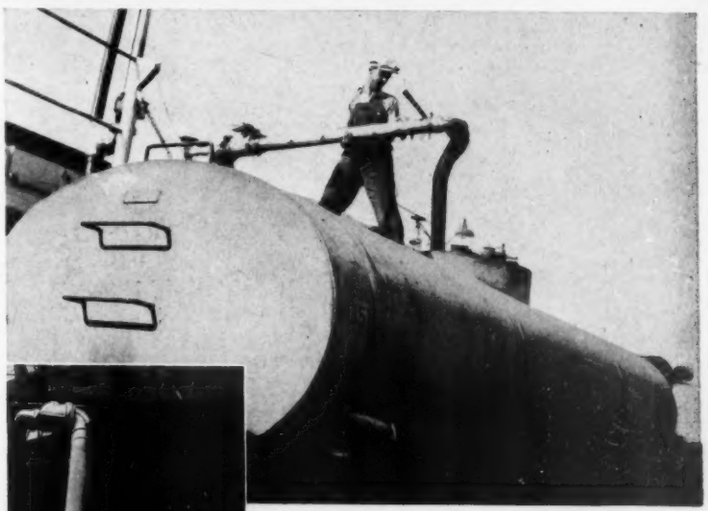
(Bits, Reamers and Rotary Hose)

NAME _____

ADDRESS _____

COMPANY _____

POSITION _____



CHIKSAN BALL BEARING SWING JOINTS ARE RECOMMENDED FOR THE FOLLOWING APPLICATIONS:

● OIL AND GASOLINE LOADING RACKS — TANK CARS — ROTARY HOSE—CEMENTING HOSE—EXPANSION UNITS—WATER LINES — CHEMICAL PLANTS — PORTABLE CORING UNITS—LATHES AND OTHER SHOP MACHINERY —PROTECTION OF OIL TANKS FROM SHIFTING GROUND—DOCK RISERS, ETC.

Their light weight, simple design, high safety factor and proven performance insure greater ease and economy on operation whenever swing joints are used.

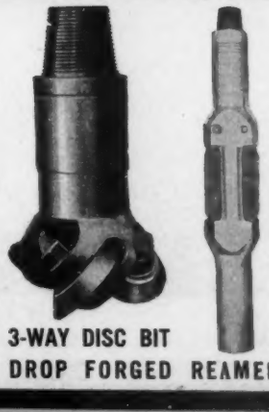
OTHER CHIKSAN PRODUCTS

CHIKSAN 3-WAY DISC BIT

● A rugged, carefully built drilling tool featuring three symmetrically spaced cutters that shear the formation. They do not scrape. Less power to operate, therefore easy on drill pipe. The Three-Way Bit has proven its superiority. Available in sizes from 5⅝" to 20".

A DROP FORGED REAMER

● The CHIKSAN HEAVY DUTY REAMER is forged of special alloy steel, heat treated. Rollers are unusually long, insuring maximum cutting. Herringbone cut teeth eliminate tracking. It will satisfy your most severe operating requirements.

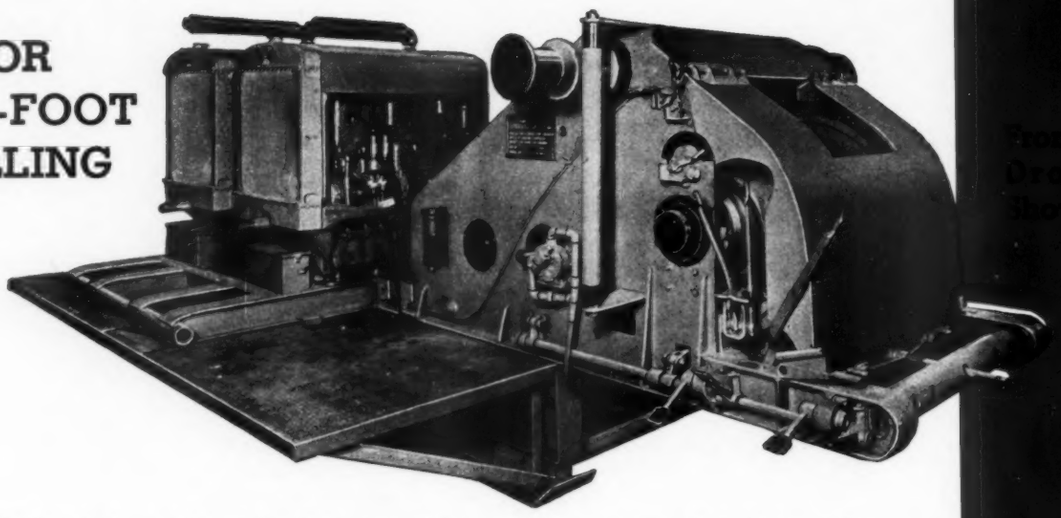


3-WAY DISC BIT

DROP FORGED REAMER

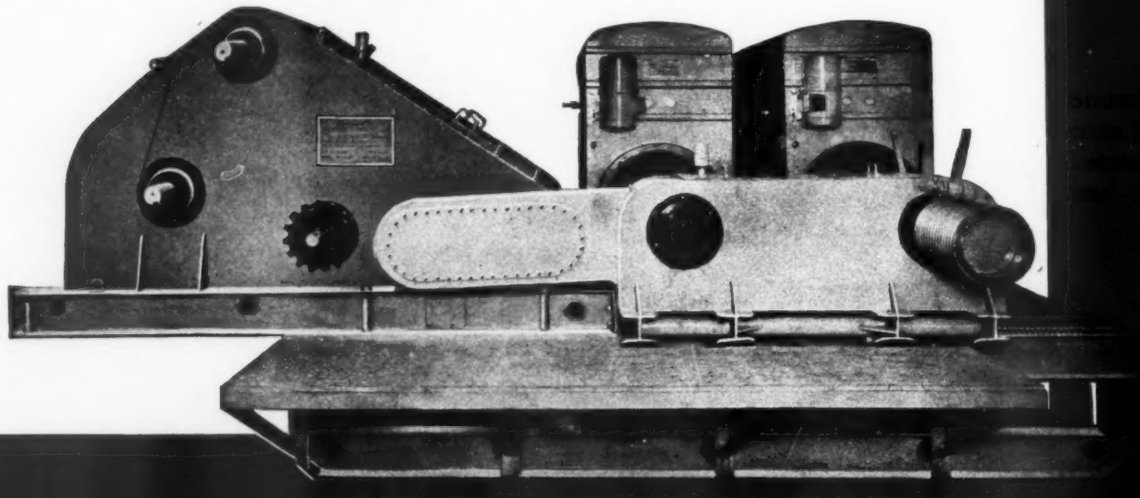
MODEL R-876
PORTABLE RIG

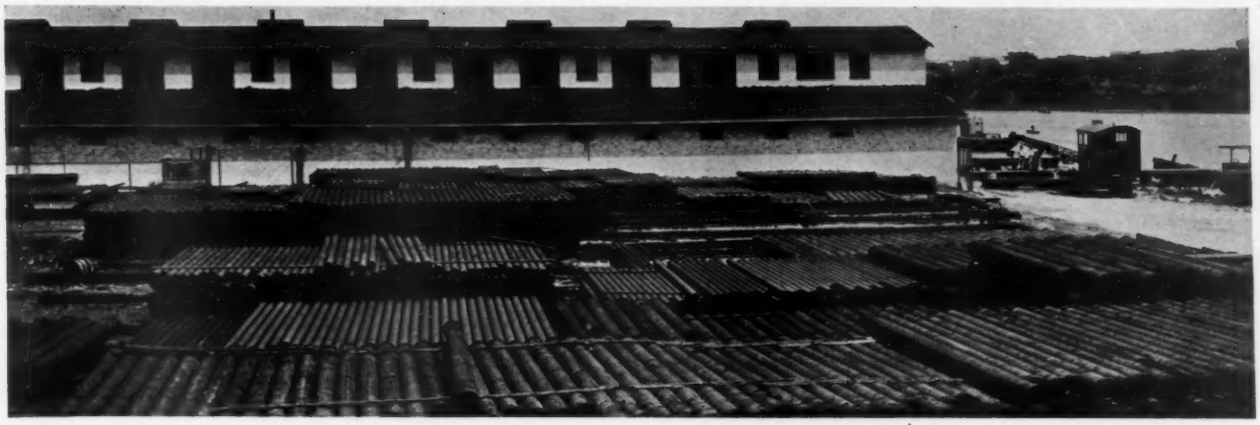
FOR 5000-FOOT DRILLING



Front View of Draw Works Showing Controls

Model R-876 includes totally enclosed draw works, two engines, compounding drives, and substructure. Pump provided force feeds lubrication to all chains, bearings, sprockets and shafts. Self-energizing brakes are watercooled by circulation in shoes attached to bands. Heavy duty friction clutches on drum and rotary shafts allow maximum power of engines to be utilized when most needed. Heavy duty herringbone gear transmission provides four forward and three reverse speeds. Dual engine drive (150 or 180 h.p. gasoline, natural gas, or Diesel fuel) permits power of both engines to be compounded into draw works or pumps. Air compressor included in the unit is used to engage and disengage engine clutches. Substructure, allowing either one or two pumps to be set on ground level, fits any height derrick, and provides walkway around entire unit.





Oilwell warehouse on the Panuco River, Tampico, Mexico

ANVIL BRAND EXTRA HEAVY
OIL FIELD SNATCH BLOCK
LATCH PIN TYPE

No. 1084

This heavy duty all-steel snatch block has the following features:

Drop-forged hook and connecting parts.

Extra thick shells with rolled edges to protect the wire line.

Extra large Center Pin Alemite Lubricated.

This heavy duty snatch block is used extensively in the fields for handling boilers, drawworks and other heavy equipment.

Also made in self-locking type.

AUER LEATHERS AND LEATHER PRODUCTS

have been standards of quality for generations both in this country and previously, in Germany. C. A. Auer, and his successors, the present firm, has manufactured high grade leather for packings since 1880. Today, the largest maker of special Oil Industry packings, it is known the world over.

The present owners have spent their lives in the manufacture of leather and personally supervise every operation from beginning to end. This is *your* guarantee Auer products give you only the best material, workmanship and quality for *your* particular needs.

C. L. & W. W. AUER
Established 1880 CORRY, PA.

1st NATIONAL

• STATEMENT OF CONDITION •

December 31, 1936

ASSETS

Cash on Hand and Due from Banks	$48,824,022.32
United States Securities Owned	22,115,397.28
Stock in Federal Reserve Bank	306,300.00
Other Stocks and Bonds	2,883,306.49
Loans and Discounts	48,902,841.09
Furniture and Fixtures	275,000.00
Real Estate and Banking House	2,425,000.00
Other Real Estate	1,457,693.97
	$127,189,561.15

LIABILITIES

Capital Stock		$8,000,000.00
Surplus Fund		2,210,000.00
Undivided Profits, Net		2,528,502.12
Reserved for Taxes, Etc.		431,514.75
DEPOSITS		
Individual	$67,814,190.58	
Banks and Bankers	38,142,731.87	
U. S. Government	8,062,621.83	
		114,019,544.28
		$127,189,561.15

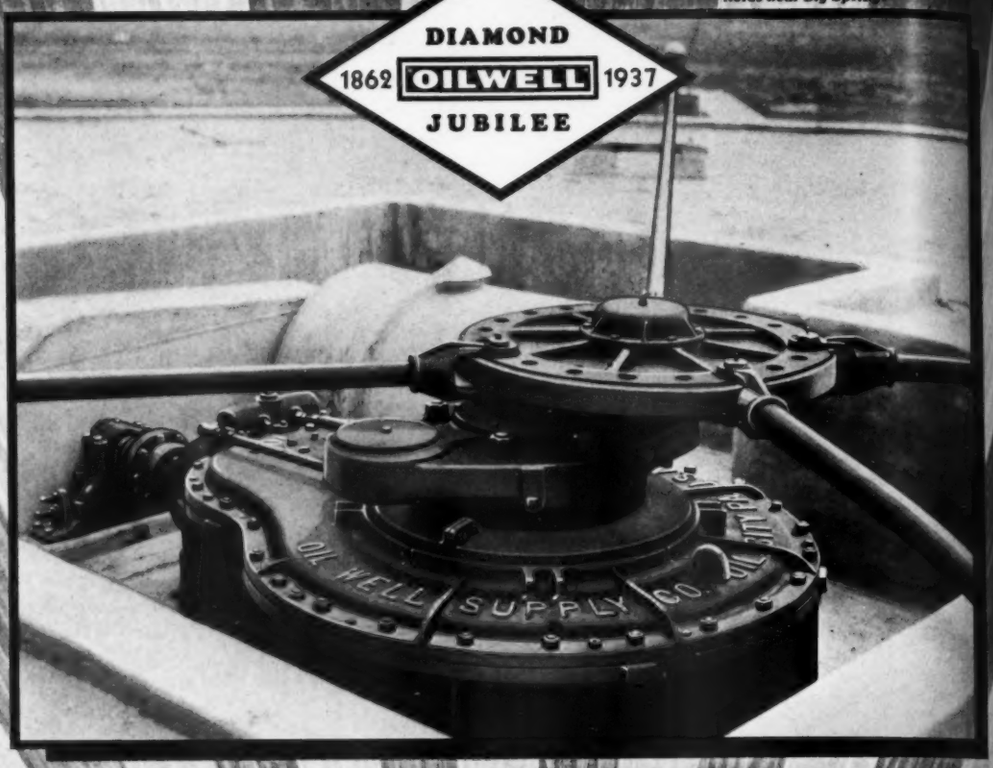
Trust Department

Administrative Trusts	$22,234,060.87
Corporate Trusts	27,305,132.00
Total Trust Department Assets (Not Included in Bank Totals)	$49,539,192.87

FIRST NATIONAL BANK
IN DALLAS MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

A Tribute to IXL GEARING

DIAMOND
1862 OILWELL 1937
JUBILEE



Oil Well Supply Company's New No. 100-B Oilbath geared Power Multiple Pumping Unit, equipped with IXL Single Helical Gears in service in the fields near Big Spring.

EXPERIENCE counts! For three quarters of a century Oil Well Supply Company has built and supplied the oil fields with quality equipment. It is therefore a very definite tribute that it looks to another company of even longer engineering history for quality gears. IXL engineers designed and produced the Single Helical Gears that drive this powerful Oilbath Geared Power Multiple Pumping Unit. They are the product of another company three quarters of a century old, and are the result of years of study and experiment in cooperation with engineers right in the oil fields. They are not just "a set of gears." Because of the severe demands of oil pumping service, they are built to stand brutal service. Gears are heat-treated. Pinions are heat-treated and hardened with ground teeth for accuracy.

Like the complete line of IXL Helical Oil Well Pumping Reducers, the most rigid inspections are added to specialized gear engineering experience, assuring the highest quality of performance. Not a failure of an IXL Helical Pumping Reducer has been reported in over four years of service.

A complete line of Single and Double IXL Helical Pumping Reducers are available. Low speed shaft of one diameter without fillets or tapers and made of fatigue-resisting steel. Over-sized bearings on all shafts. Housings are cast of semi-steel, heavily ribbed to extra heavy baseweight where it is needed. In short, these IXL units are built "to take it."

New IXL Data Book 402, giving complete specifications for computing well loads and selecting the right unit for any application.

IXL
The Mark of Quality

FOOTE BROS.
GEAR & MACHINE CORPORATION
5306 S. Western Boulevard - Chicago

DIRECT FACTORY REPRESENTATIVES: • George J. Fix Co. 2413-15 Commerce St., • T. C. Graham P. O. Box 596, • Max E. Landry 533 Mayo Bldg.

BACKED BY Performance

DODGE-TIMKEN CLAMP SLEEVE PILLOW BLOCK
DODGE DIAMOND "D" FRICTION CLUTCH
DODGE "D-V" DRIVE
DODGE-TIMKEN SPECIAL DUTY PILLOW BLOCK
DODGE-TIMKEN TYPE "C"

• In the oil fields—where power transmission equipment must stand up to severe continuous service — there you will find Dodge power drive units, noted for their ruggedness and performing dependably.

• The Dodge line includes everything for the mechanical transmission of power in the oil industry. Each product is built to uniform standards of quality of material and workmanship. Dodge engineering service is available for the design of special power drive units to meet individual requirements. The complete line of standard products available means that Dodge engineers can select the right type of every appliance for the specific job.

• Dodge power drive and bearing units have built up an enviable record of performance in the oil fields. Dodge engineers are familiar with your production problems. Dodge units, therefore, combine correct engineering with quality manufacturing which insures economical and dependable service.

DODGE MANUFACTURING CORPORATION
MISHAWAKA, INDIANA
U. S. A.

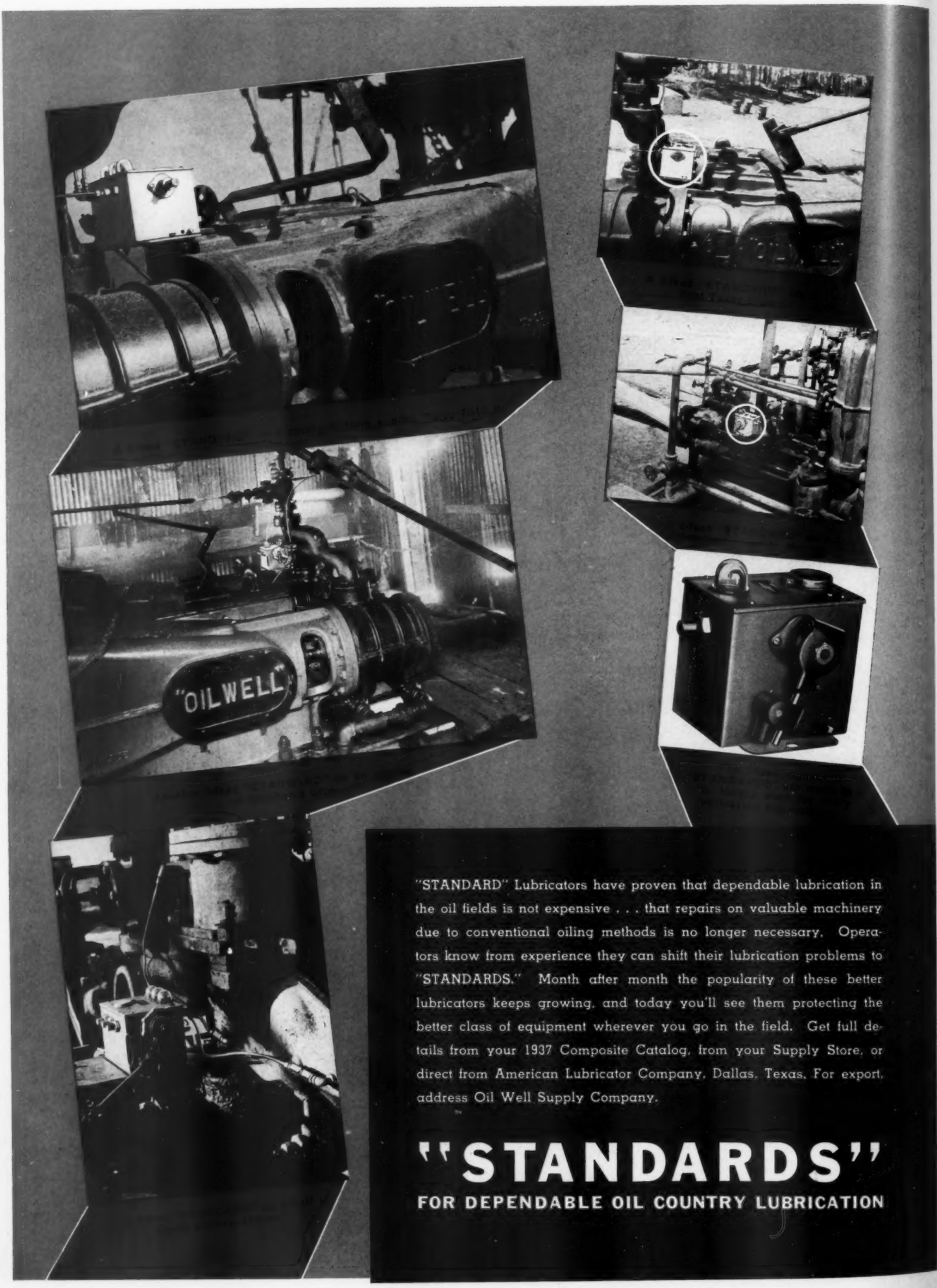
•

Write for complete catalogue. See our oil field transmission section in the Composite Catalogue.

THE Right DRIVE FOR EVERY JOB

There is added VALUE in the Name DODGE

DODGE
MISHAWAKA



"STANDARD" Lubricators have proven that dependable lubrication in the oil fields is not expensive . . . that repairs on valuable machinery due to conventional oiling methods is no longer necessary. Operators know from experience they can shift their lubrication problems to "STANDARDS." Month after month the popularity of these better lubricators keeps growing, and today you'll see them protecting the better class of equipment wherever you go in the field. Get full details from your 1937 Composite Catalog, from your Supply Store, or direct from American Lubricator Company, Dallas, Texas. For export, address Oil Well Supply Company.

"STANDARDS"

FOR DEPENDABLE OIL COUNTRY LUBRICATION

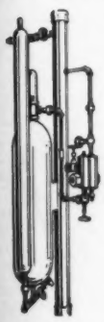
YOU'LL FIND BADGETT

- STEAM LINE LUBRICATORS
- STEAM ENGINE LUBRICATORS
- AUTOMATIC STACK BLOWER CONTROLS
- AUTOMATIC GAS-FIRE AND STEAM CONTROL REGULATORS
- CHEMICAL LUBRICATORS
- HAMMER UNIONS

at "OILWELL"

USE BADGETT EQUIPMENT for Greater Safety and Economy, Greater Operating Simplicity, More positive Control—

Badgett Steam-Line Lubricators and Steam Engine Lubricators are low in cost, give perfect lubrication, and have no working parts—there is nothing to get out of order and cause serious and costly delays. Amount of oil fed into steam line is governed automatically by speed of engine. They are self heating and self cleaning, and give positive feed. Less than 15 minutes every twelve hours are required to refill and properly care for the lubricators.

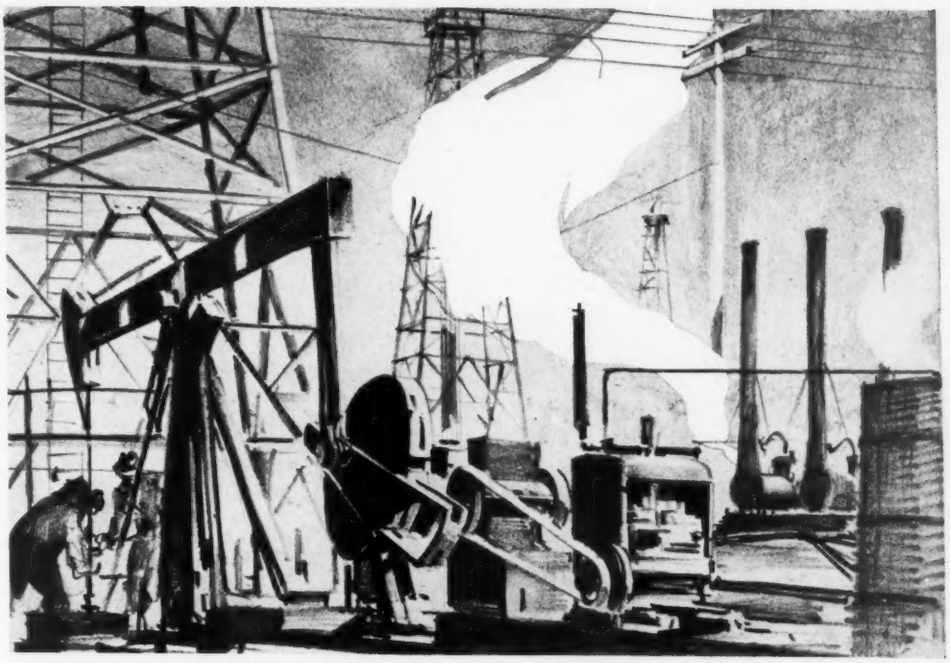


Steam Line Lubricator

The Badgett Automatic Gas Regulator is the outstanding fire regulating equipment, guaranteed to be the best money can buy, simple to install, more than simple to operate, inexpensive to maintain, saves time and trouble, and will quickly pay for itself with the savings on fuel and expensive pop-off valves. Positive in control, the regulators are guaranteed to work accurately even though the gas pressure varies as much as 50 pounds. Easily changed for any burner pressure.

Investigate the advantages of Badgett Equipment—it will pay for itself with the savings it makes. Export and domestic orders handled through your supply store. Catalogue giving complete description of all products will be sent on request.

BADGETT
STEAM LUBRICATOR CORP.
Box 160
CHICKASHA, OKLA.



On Pump — From a lithograph by E. M. Schiwetz

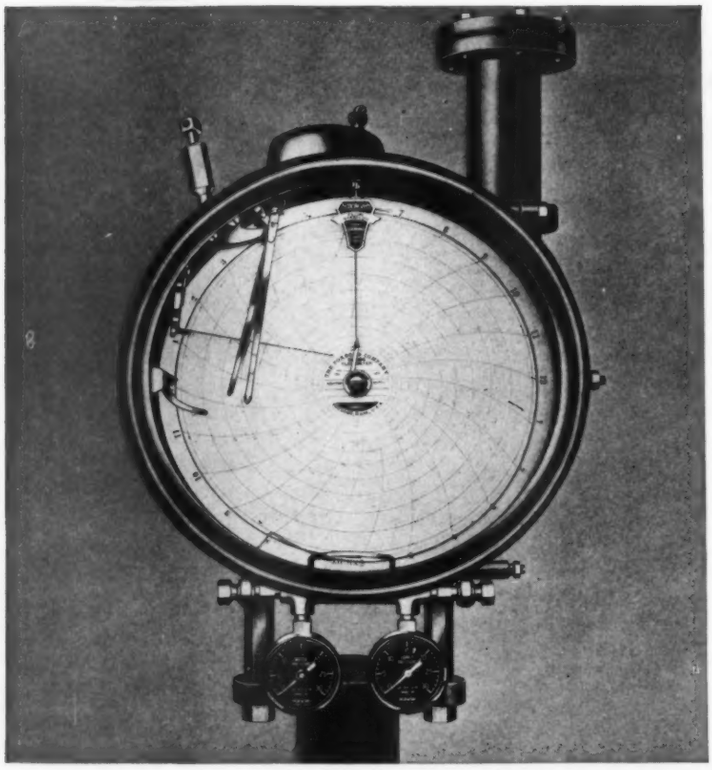
THE expanding oil industry of the Southwest is a tremendous market for the manufacturers and suppliers of production, refining and marketing equipment, and Houston, as capital of the Southwest's petroleum empire, is ideally situated as headquarters for both. Many leaders in the field are already located in Houston, and scarcely a month passes that some new firm is not added to the list. The FIRST NATIONAL BANK in Houston has been privileged for many years to serve oil and its allied industries; it renders a banking service that is not only complete but thoroughly experienced.

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

Large stocks of Oilwell pipe are kept at central points

BEWARE THE COMPASS CIRCLE RECORD

. . . a symptom of sluggish control



Minute variations are passed by and the chances are that every change is late in being recorded and controlled when you have charts with "compass circle records." But, inspect a Stabilog Temperature Control chart (or that of any other Stabilog Controller). The record is that of alert, active instrument action. Every change, no matter how minute, meets with instantaneous response. There is nothing to hinder corrective action and allow changes to gather headway. There is no "hunting"—no periodic cycling. You get the kind of control that assures balanced, economical operation.

Another reason for this dependable control is the unequalled accuracy and speed of response of Foxboro instruments. Their precision is retained for long periods of time. Complete information is yours for the asking. The Foxboro Company, 60 Neponset Ave., Foxboro, Mass., U.S.A. Branches in 25 Principal Cities.

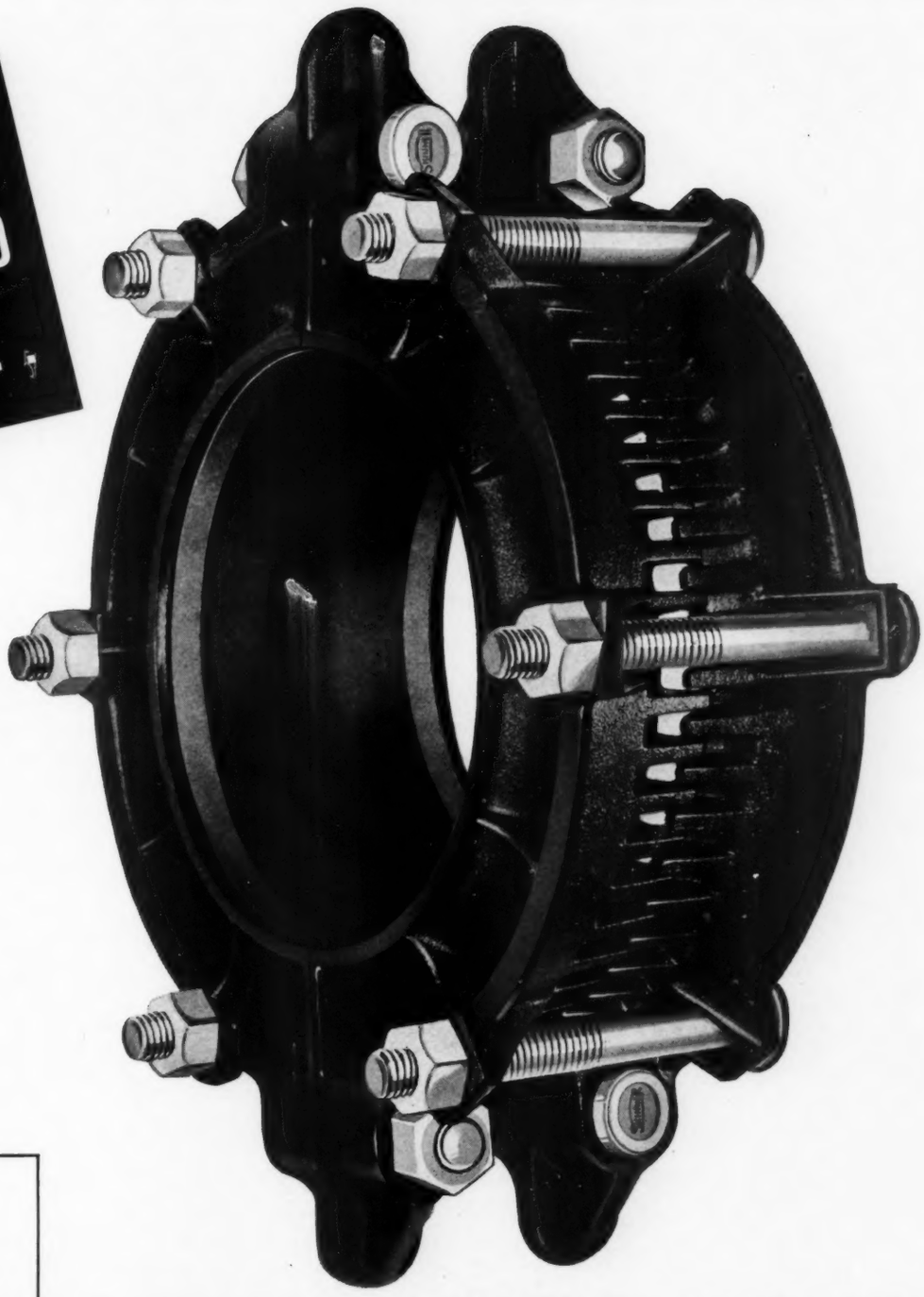
FOXBORO

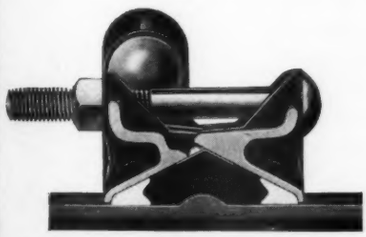
REG. U. S. PAT. OFF.

STABILOG CONTROL

RESPONSE · ACCURACY

QUICK REPAIR FOR WELDED JOINTS . . .





Section shows how gasket is SEALED. Note Monel metal sheath band at top of gasket, and hard vulcanized rubber tips at sides. No chance of contact with soil or air. Holds up to 600 lb. pressure.

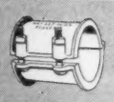
SKINNER HIGH PRESSURE WELD CLAMP

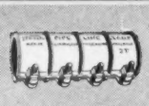
(1) for pin hole leaks or splits in welded joints.
(2) to replace, without disturbing the line, mechanical couplings which are leaking.

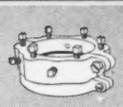
As the main rings are drawn together by the pull bolts, the fingers intermesh and the gasket—SEALED by the Monel metal band at the top, and the hard tips at the gasket edges—is compressed equally throughout the entire clamp.

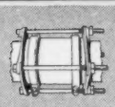
Saves expense and labor of removing pipe—eliminates service shutdowns. Instantly applied by one man. Direct in action, it stops original leak. Much cheaper than a mechanical split sleeve. AN ABSOLUTELY PERMANENT REPAIR. Write for prices.

M. B. SKINNER CO. *Est. 1898* **SOUTH BEND, IND.**

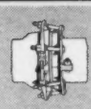

EMERGENCY PIPE CLAMP

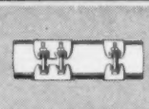

PIPE LINE CLAMP


PIPE JOINT CLAMP


COLLAR LEAK CLAMP

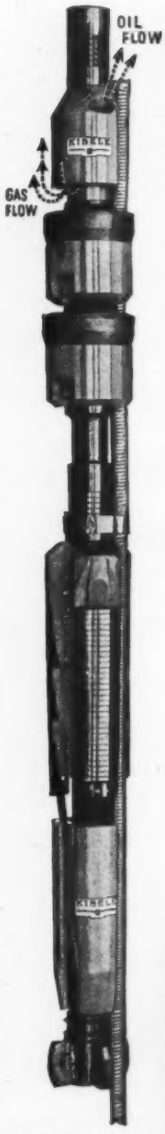
HIGH PRESSURE WELD CLAMP


BELL JOINT CLAMP


PRESSED STEEL ECONOMY CLAMP

The Perfect Sale is the Repeat Order

Kibele 2-step Tubing Catcher for wells less than 4,000 feet deep.



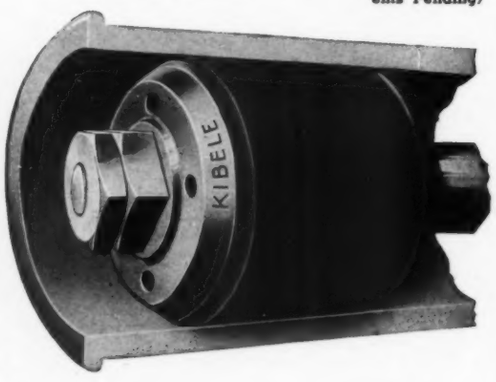
Kibele Flow Head Packer and Tubing Catcher. Patents applied for.

Our supply company friends, with their complete stocks of Kibele products throughout the oil country, offer best evidence that there is many a repeat call for KIBELE TUBING CATCHERS, FLOW HEAD PACKERS, SWABS AND PISTONS.

For Detailed Information on all Kibele Products see Pages 983-986 Composite Catalog.

Kibele 7" Two-cup Casing Swab Convertible from One-cup Type. (Patents Pending)

Kibele Boiler Feed Pump Piston (Patented)



KIBELE
MANUFACTURING COMPANY

FLUID EXPANDING PUMP PISTONS — A KIBELE DOESN'T COST.... IT EARNS — SWABS and TUBING CATCHERS

5101 MAPLE AVE. DALLAS, TEXAS

PATENTED

Export Representative: Continental-Emsco Co.
30 Rockefeller Plaza, New York, N. Y.

QUALITY WRENCHES

MANUFACTURERS OF WRENCHES SINCE 1835

COES GENUINE SCREW WRENCH "Knife Handle" No. 92

COES STEEL HANDLE WRENCH No. 91

IMPROVED ADJUSTABLE "S" NUT WRENCH No. 48

COMBINATION PIPE AND NUT WRENCH No. 45. Bright

STEEL HANDLE NUT WRENCH No. 70

MONKEY WRENCH Wood Handle No. 62

BEMIS & CALL CO.

MAKERS OF A COMPLETE LINE ALL STYLES ··· ALL SIZES

Quality Wrenches

SPRINGFIELD, MASS.

SOLD BY LEADING DISTRIBUTORS

IDECO
OIL FIELD EQUIPMENT

There is no substitute for Oil Country Experience in Building Oil Country Equipment

DERRICKS
SUBSTRUCTURES
ROTARY ENGINE SUPPORTS

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DRAW WORKS
ROTARIES
SWIVELS
CROWN BLOCKS
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GEARED PUMPING MACHINES
STANDARD RIGS
STEEL FRONTS
PORTABLE DRILLING RIGS
CHAIN RIGS
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SAMSON POSTS
JACK POSTS
WALKING BEAMS
PITMANS
WHEELS
RIG IRONS

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JACK SHAFTS
BEAM HANGERS

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SAND REELS
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CABLE TOOLS
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STEEL BUILDINGS
STEEL TOWERS

THE INTERNATIONAL DERRICK & EQUIPMENT CO.

AN INTERNATIONAL ORGANIZATION DEVOTED TO BUILDING ENGINEERING, AND DISTRIBUTING OIL FIELD EQUIPMENT

DIVISION OF INTERNATIONAL-STACEY CORPORATION

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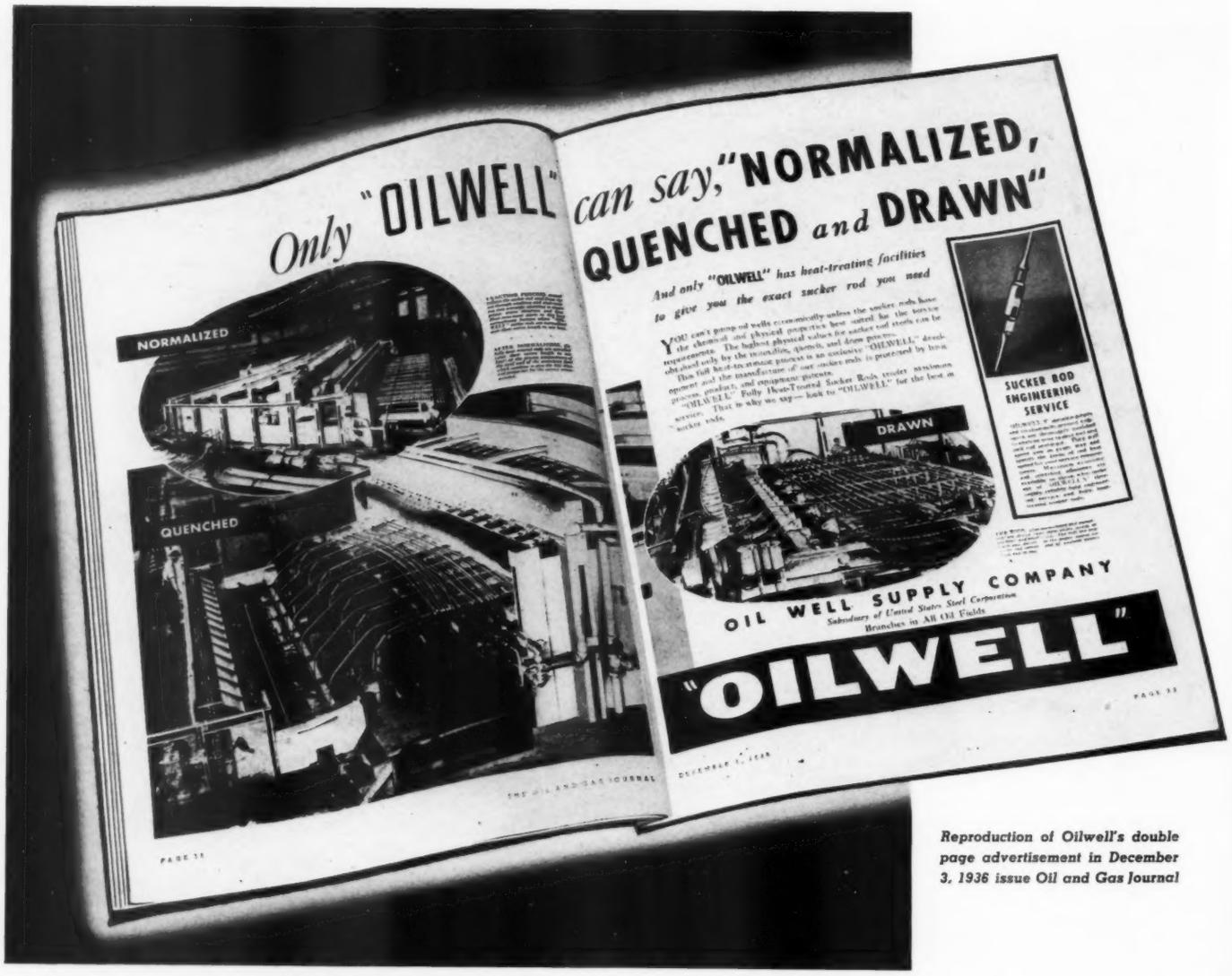

Only "OILWELL" can say, "NORMALIZED, QUENCHED and DRAWN"
And only "OILWELL" has heat-treating facilities to give you the exact sucker rod you need
NORMALIZED
QUENCHED
DRAWN
SUCKER ROD ENGINEERING SERVICE
OIL WELL SUPPLY COMPANY
Subsidiary of United States Steel Corporation
Branches in All Oil Fields
"OILWELL"

Reproduction of Oilwell's double page advertisement in December 3, 1936 issue Oil and Gas Journal

"OILWELL" *Selects* SALEM FURNACES TO PROTECT QUALITY

The world's foremost producer of tools and supplies for oil men kept its quality secure by turning to the leader in industrial furnace engineering and manufacture. Thus "Salem" quality protects "Oilwell" quality. "Salem" furnaces for every industrial heating purpose are fast becoming known all over the world.

SALEM ENGINEERING COMPANY
SALEM, OHIO

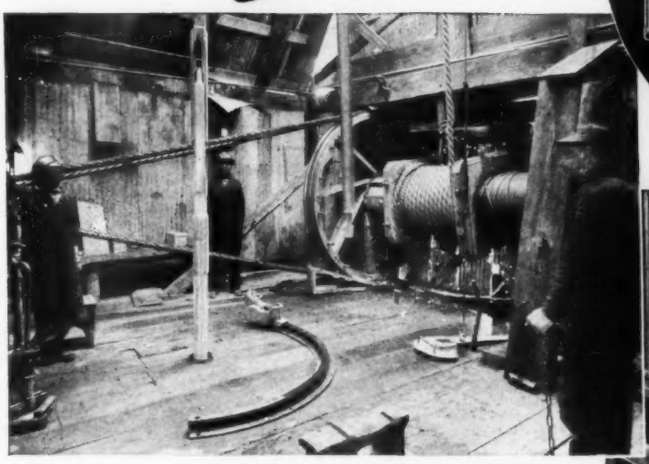
Salem Engineering Company of Canada
WELLAND, ONTARIO

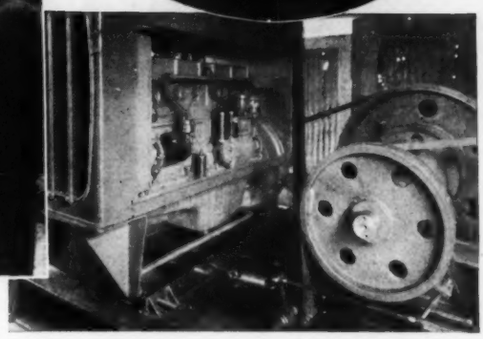
British Salem Engineering Company
LONDON, ENGLAND

SALEM INDUSTRIAL FURNACES

POWERFUL • SPEEDY • LIGHT in WEIGHT

...the Modern Portable Engine





This six-cylinder portable Waukesha Oil Field Engine is one of eleven such units used by a prominent oil company in the Pennsylvania fields. Operating on natural gas, it is driving an Oil Well Supply Co. cable tool drilling rig, drilling to a 4000-ft. depth; diam. of hole, 6 in.; ¾ in. wire line.

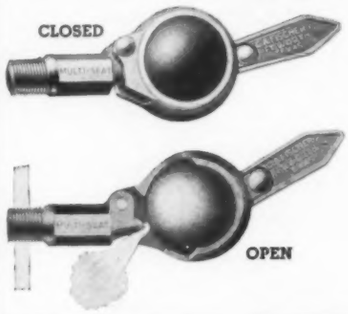
Powerful, speedy, rugged enough for severe oil field service, yet light in weight . . . it is the ideal portable power unit in the 100 hp. range.

Thoroughly modern in design it has removable cylinder liners . . . a built-in fly-ball type governor . . . a husky, seven-bearing crankshaft of heat-treated hardened steel . . . pressure oiling . . . down draft carburetion with manifolds of advanced design which improves performance and increases its service life.

Write today for New Bulletin 902, *Waukesha Motor Company, Waukesha, Wisconsin.*

WAUKESHA ENGINES

WE CONGRATULATE THE "OILWELL"
ON ITS 75TH ANNIVERSARY
"THOUSANDS OF SEATS ON THAT BIG LEAD BALL."



"MULTI-SEAT" BOILER GAGE COCKS ARE STANDARD FACTORY EQUIPMENT ON "OILWELL" HIGH PRESSURE BOILERS AND CAN BE OBTAINED AT ALL

OIL WELL SUPPLY STORES

C. A. FISCHER CO.

P. O. Box 83 Fort Worth, Texas

5-pint, single-feed left-hand ratchet drive

Manzel
Force Feed Lubricators
MODEL "25"

For Positive and Economical Lubrication of Cylinders and Bearings

Deliver the oil to the cylinder or bearing regardless of steam pressure, temperature, or kind of oil used, in exact proportion to the speed of the engine.

Will supply plenty of oil for the heaviest duty engine or pump, yet may be regulated to supply fractional parts of a drop when used on compressors or other machinery requiring very little oil.

Built to withstand hard usage and to pump against high pressure.

All working parts are completely enclosed. Any unit may be removed without stopping lubricator or interfering with other units.

A large, clear-vision, heavy glass sight feed shows at all times exactly how much oil is being supplied.

Each feed is independently adjusted.

Made with 1 to 30 feeds

Write for Catalog 25-B

4-feed Model "25" Showing ease with which pumping unit may be removed from reservoir.

Manzel Chemical Feeders
For Injecting Treating Compounds into Crude Oil Lines

Feed the chemical into the oil line in exact proportion to the amount of oil pumped.

Entire driving mechanism enclosed and operates in bath of oil.

PISTON VALVE ACTION—Pumping unit fitted with the "Manzel" patented piston valve, the most satisfactory type of valve for handling treating chemicals. Only one valve used for both suction and discharge. This may be taken out for cleaning without disconnecting feed line.

ACCURATE REGULATION—Feed adjustable from a fractional part of a drop per stroke up to any amount desired.

CHEMICAL RESERVOIR—Furnished with or without 3-gallon container. Container has large hinged cover for quick filling.

SIGHT FEED—Can be furnished with sight feed to show the exact amount of chemical being pumped.

Made with ratchet, rotary or direct lever drive, also with electric motor or gas motor drive.

Ratchet Drive Feeder with 3-gallon Reservoir and sight feed

Write for Bulletin 60-A

Manzel Brothers Company

336-338 Babcock Street Buffalo, N. Y., U.S.A.

Slush Pump Liners

THE liner with an internal inlay of I.R. Metal — precision honed to a mirror finish and having an ***absolutely uniform surface and depth hardness*** of **900 Diamond Brinnell**

STANDARD equipment for **"OILWELL"** Pumps. Standard replacement for most majors, independents and contractors who have used them once.

And Now—

DI-HARD Liners are available for **GARDNER DENVER** Slush Pumps through authorized **GARDNER DENVER** distributors exclusively.

Fully Patented

Manufactured by

OIL WELL SUPPLY CO.

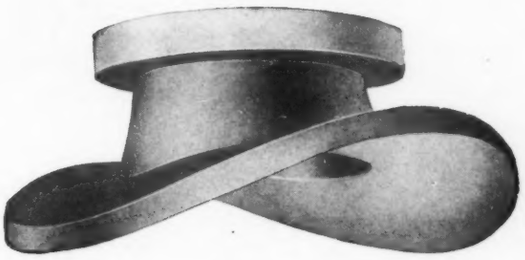
under exclusive license from

INDUSTRIAL RESEARCH LABORATORIES, Ltd.

527-529 East 16th St.

Los Angeles California

Accessories for Boilers and Tanks



LENAPE HYDRAULIC PRESSING & FORGING CO.

Plant—Lenape, Pa. *P. O. Address*—West Chester, Pa.

SPANG WELDLESS JARS

The Time-Proved "Higher Standard" Jars

Carried in Stock by

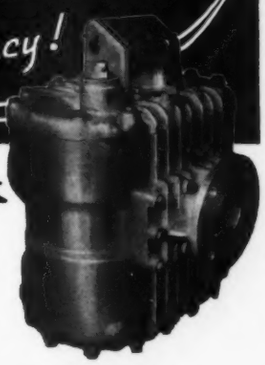
"OILWELL" STORES

in all oil fields

SPANG & COMPANY

Butler, Pa.

OCECO Meters . . provide permanent unvarying accuracy!



• Oceco meters give unsurpassed accuracy in measuring any transfer. They are unaffected by variations of pressure, viscosity, temperature or wear . . . can be used with any petroleum product ranging from lubricating oil to finished gasoline . . . and without recalibration. Oceco meters are furnished fully calibrated and sealed . . . do not require adjustment in the field. Especially suited for barge and tanker transfer as they permit immediate dispatch of the cargo without time wasting settling. Write for descriptive literature.

Specify **OCECO FITTINGS** your tanks deserve the best

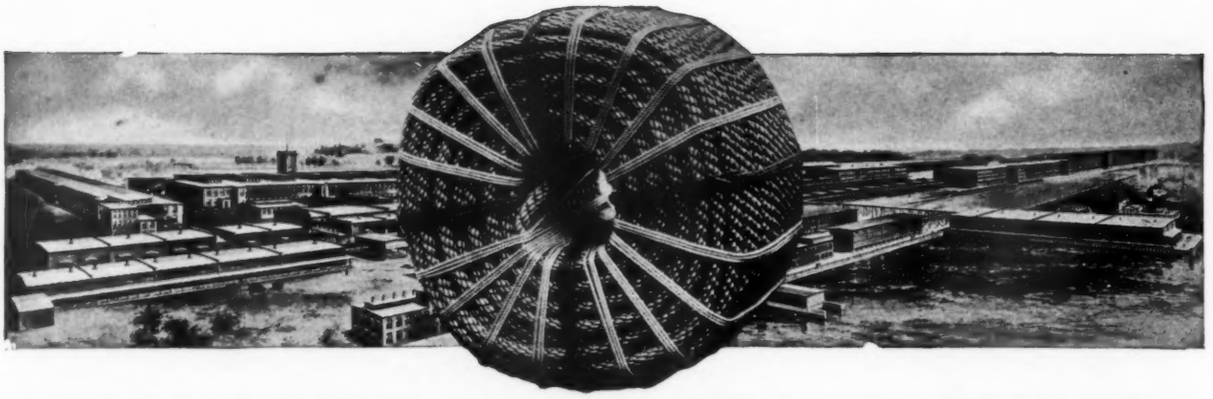
OCECO Fittings

THE JOHNSTON & JENNINGS CO.
OCECO DIVISION
884 Addison Road • Cleveland, Ohio
Engineering and Sales Services NEW YORK • CHICAGO • PITTSBURGH
BEAUMONT, TEXAS • TULSA, OKLAHOMA • LOS ANGELES • OAKLAND, CALIF.

THE STANDARD PLUG OF THE INDUSTRY FOR OVER 20 YEARS

Liberty Accessories Corporation

262 E. 3rd Street - Mount Vernon, N. Y.



PLYMOUTH OIL FIELD CORDAGE

for QUALITY and ECONOMICAL SERVICE

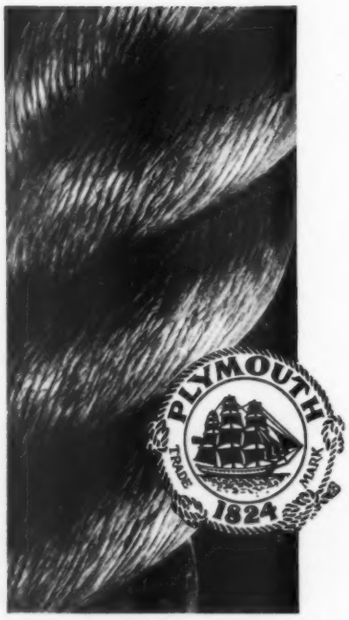
IT LEADS THE FIELD!

The popularity of Plymouth Oil Field Cordage is based on quality and economical drilling service.

•

Plymouth Manila Drilling Cables and Crackers are made from fiber carefully selected for strength and durability. They are correctly and uniformly laid, and receive special lubricating treatment—possessing the needed elasticity and resistance to abrasive wear, both internal and external.

•



Sold through your nearest Oil Well Supply Company Branch Store—Plymouth Manila Drilling Cables, Crackers, Bull Ropes, Cat Head Lines, Spinning Lines and Torpedo Lines—each of these products will be found to best meet the requirements of use.

•

PLYMOUTH CORDAGE COMPANY

NORTH PLYMOUTH, MASSACHUSETTS

Distributed by

OIL WELL SUPPLY COMPANY

STORES IN ALL FIELDS

PLYMOUTH

"the rope you can trust"

Look for the Red Tag—always attached to every TRIMO *Pipe Wrench*

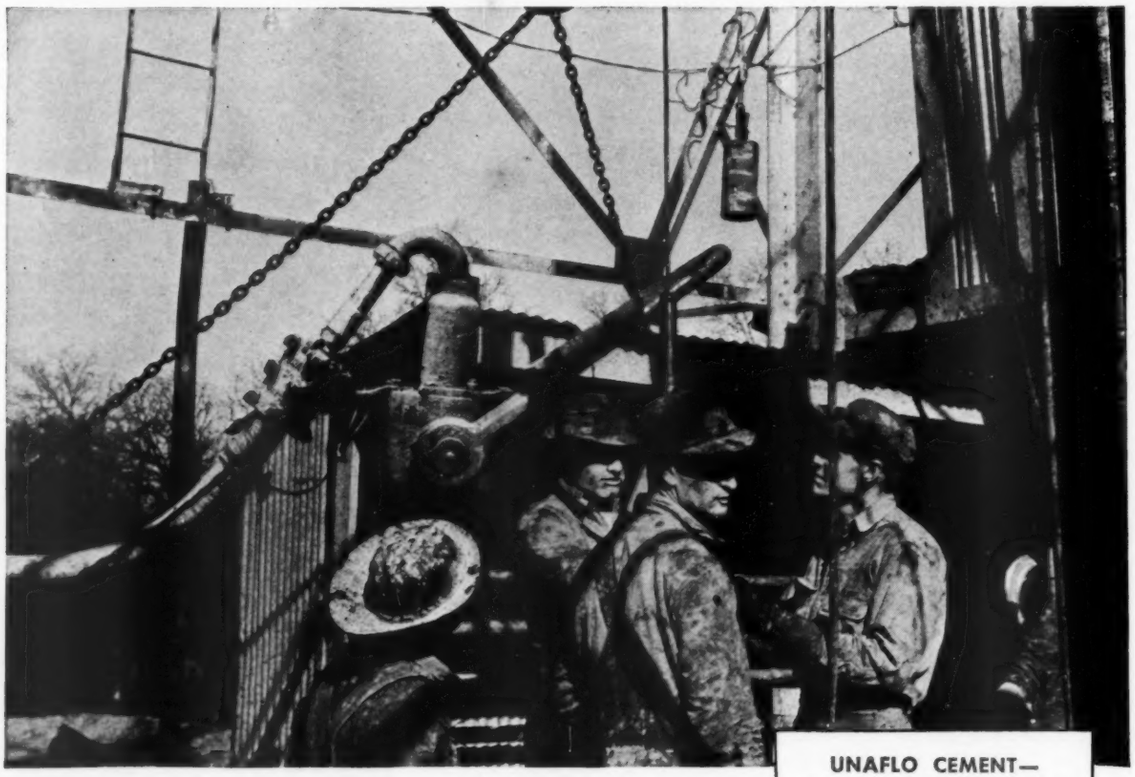
For half a century, Trimont Mfg. Company has produced a steady flow of quality pipe wrenches for use in the oil fields.

To-day the modern TRIMO is made of Chrome Molybdenum Steel—Handle Drop Forged. You can always trust TRIMO to work safely—to last under pressure—to save money for you.

TRIMONT MFG. CO., INC. ROXBURY (BOSTON), MASS.

Unaflo Fluidity Retained

after 2¼ Hours Under 1450 Pounds Pressure



● Here is how Unaflo performed on a plug-back job recently reported from the field:

One hundred and fifty bags of Unaflo were run, the tubing was lifted and washed out. A pressure of 1450 pounds was applied to press the cement into the formation. After 2 hours and 15 minutes the cement was still fluid. The operator lowered the tubing and washed out 220 feet of cement.

It's Unaflo's *safety* factor that is making this new oil well cement the talk of the petroleum industry. Owners figure it is good business to use a *safe* cement in a proposition as expensive as a well.

Why not give this better oil well cement a trial on your next job?

UNIVERSAL ATLAS CEMENT CO.

United States Steel USS *Corporation Subsidiary*

AMICABLE BLDG., WACO, TEX.
KANSAS CITY • TULSA • OKLAHOMA CITY

UNAFLO CEMENT—

1. Gives you more time to get it down.
2. Remains fluid longer.
3. Follows irregularities of well bore and casing.
4. Hardens thoroughly with high density after it is placed.
5. Displaces contaminating elements in the well.
6. Not stiffened by mud contamination.
7. Not stiffened by salt water contamination.
8. Sets satisfactorily in sulphate water.
9. Requires no ice.
10. Makes squeeze and plug-back jobs easier, surer and more successful.

U-9

UNAFLO

FOR SAFE DEEP-WELL CEMENTING

MAKING OIL WELL HISTORY

75 YEARS OF SERVICE **25 YEARS OF SERVICE**

THE OIL WELL SUPPLY COMPANY
DALLAS, TEXAS

THE GUIBERSON CORPORATION
DALLAS, TEXAS

Congratulations!

to a great manufacturing and distributing company on its

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1862 OILWELL 1937
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75 years of progress

FOR MANY YEARS THIS SYMBOL OF CONSISTENT QUALITY HAS BEEN BACKED BY

Lonergan
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In the Manufacture of Pressure Specialties

Model "BOE"

Model "GH"

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EST. 1872

ACCURATE---

OKLAHOMA RIG AND SUPPLY CO. MUSKOGEE, OKLA. HANDLES & WOOD WORK

Gauge poles, graduated in ⅛ and ¼ inches, for oil field tanks and filling stations, equipped with or without non-sparking brass caps.

Second growth hickory handles that have been approved by safety departments of major oil companies.

Manufacturers of all types filler cants for steel wheels—also all types wire bound or nailed wooden shipping boxes.

Available Through Your Supply Store

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MUSKOGEE, OKLAHOMA

An Oilwell rig in Alaska

Transporting Oilwell boiler by ox team

Gusher No. 1 in Iraq

YOU KNOW US BEST FOR COUPLINGS

But do you know we also build 41 other pipe-line products?

Fig. 164b. Style 38 Steel Coupling (20" O.D.) makes a flexible yet permanently tight connection on plain-end pipe. Size range: ⅜" I.D. to largest pipe made. **Insulating, reducing,** and **angle couplings,** based on this same general design, are also furnished.

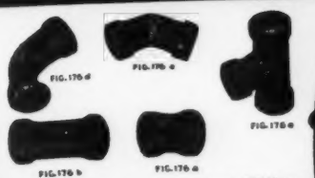

Fig. 176. Style 65 Standard Fittings (1¼" I.D.) for joining plain-end (or threaded-end) steel pipe. Self-contained, flexible, tight. Sizes ⅜" I.D. to 2" I.D. incl.

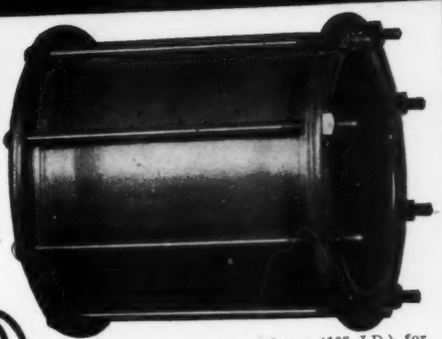

Fig. 195a. Style 40 Long Sleeve (12" I.D.) for connecting pipe ends that are widely separated. Sizes ½" I.D. to 24" O.D. incl.

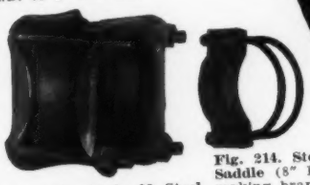

Fig. 168b. Style 38 Steel Coupling (5⅝" casing) for joining plain-end, light-wall steel pipe. Sizes 2" O.D. to 8" I.D. incl.

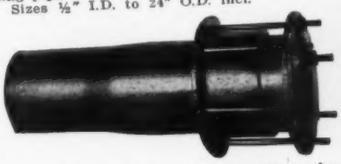

Fig. 214. Steel Pipe Saddle (8" I.D.) for making branch connections on steel and cast-iron pipe. Sizes 3½" to 24" incl. A malleable saddle is also furnished for steel pipe.

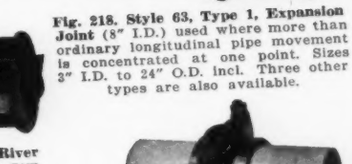

Fig. 218. Style 63, Type 1, Expansion Joint (8" I.D.) used where more than ordinary longitudinal pipe movement is concentrated at one point. Sizes 3" I.D. to 24" O.D. incl. Three other types are also available.

Fig. 199. Style 68, 45° Ell (6" I.D.) for making connections on sharp turns or bends. Sizes 1¼" to 24" incl. A full line of 90° ells, tees, crosses, laterals, and line caps is also supplied.

Fig. 226. Style 47, Type 1, Heavy River Clamp (6" I.D.) encloses unclamped screw collars or welded joints. Sizes 3" I.D. to 8" I.D. Another type encloses couplings or clamped collars.

Fig. 257. Style 78 Saddle Clamp (4" I.D.) repairs small leaks and holes in pipe. Sizes ¾" I.D. to 4" I.D. incl.

Fig. 258a. Style 79 Split Repair Clamp (4" I.D.) for repairing pipe splits or breaks. Supplied for any pipe size, and in any length.

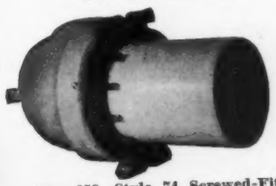

Fig. 253. Style 74 Screwed-Fitting Clamp (8" I.D.) repairs leaks through the threads of screwed fittings. Sizes ⅜" I.D. to 10" I.D. incl.

Fig. 264. Style 73 Cast Split Sleeve (12" I.D.) repairs circumferential welds, screw collars, splits, holes, etc. Maximum working pressure, 250 lbs. per sq. in. Inside length 8". Sizes 2" I.D. to 12" I.D. incl.

Fig. 273. Style 54A Cast Split Sleeve (16" O.D.) repairs bolted joints of various types on steel pipe, as well as all types of breaks or joints enclosed by Styles 52A or 73. Maximum working pressure, 500 lbs. per sq. in. Sizes 2" I.D. to 26" O.D. incl.

Fig. 255. Style 77 Band Clamp (10" I.D.) repairs small holes and leaks in pipe. Sizes 3" I.D. to 24" O.D.

Fig. 216a. Swaged Nipple (4" I.D. to 6" I.D.) Concentric and eccentric types are available with plain, threaded, or beveled ends. Sizes ½" I.D. to 20" O.D.

Fig. 251. Style 55 Porous-Weld Clamp (8" I.D.) repairs porous (but not broken) circumferential pipe-welds. Sizes 2" O.D. to 24" O.D. incl.

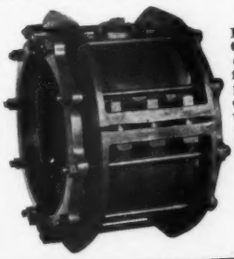

Fig. 262. Style 52A Cast Split Sleeve (18" O.D.) is used for the same purpose as Style 73, except maximum working pressure is 500 lbs. per sq. in. Inside length 8¼". Sizes 4" I.D. to 26" O.D. incl.

Fig. 232. Style 3, Type 2, Cast River Sleeve (6" I.D.) is a dual joint, with weight, for river crossings. Sizes 2" I.D. to 12" I.D. incl. A steel sleeve is also made.

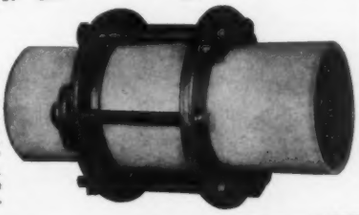

Fig. 248. Style 41 Collar Clamp (6" I.D.) prevents and repairs leaks in screw collars (threaded couplings). Sizes 4½" I.D. to 12" I.D. Style 4 is made for sizes ¾" I.D. to 4¼" CAS.

For complete information on **all** styles of Dresser products, write on your business letterhead for our **General Catalog No. 36.**

S. R. DRESSER MANUFACTURING CO., BRADFORD, PA.

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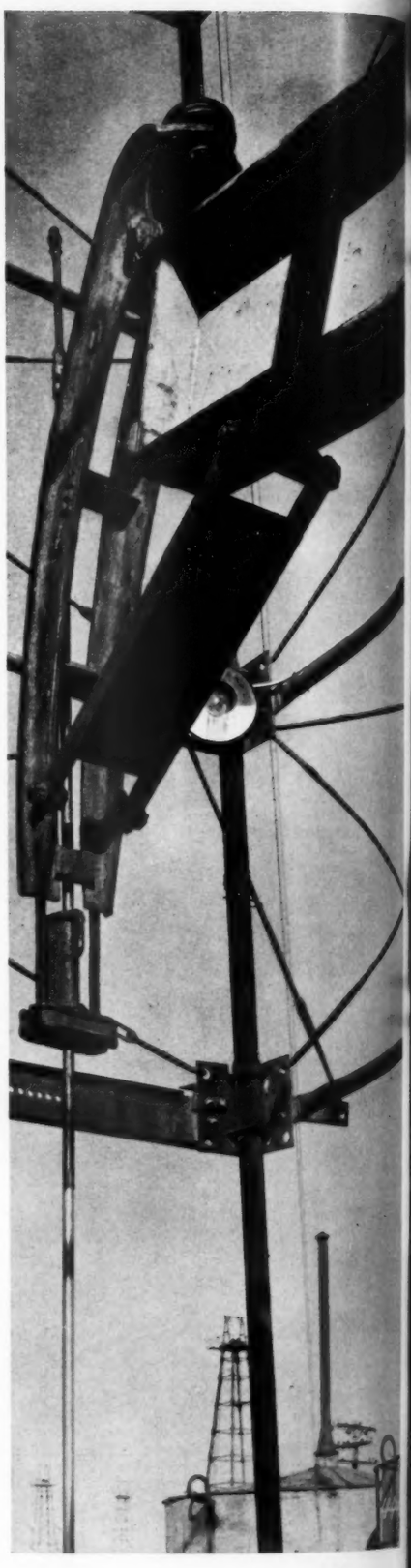


This might be captioned as a "worm's-eye view of a horse-head" but upon close inspection of the equipment shown here as part of a pumping unit in the Oklahoma City field the details reveal the simplicity and good engineering and absence of strain, that have been designed into a modern Oilwell horse-head

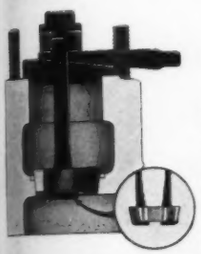
MacCLATCHIE TOOLS GIVE BETTER PERFORMANCE AT LE$$ CO$T

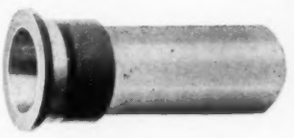
SLUSH PUMPS

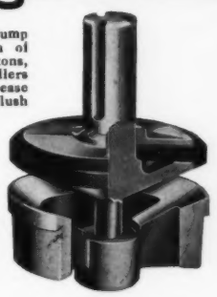
● Operators the world over depend on MacClatchie Pump parts for the most satisfactory and economical operation of their slush pumps. MacClatchie Mud Pump Valves, Pistons, Liners, Pump Rods, Valve Seat Pullers and Pump Liner Pullers are guaranteed to give the most satisfactory service. Increase your savings and satisfaction by ordering all of your slush pump equipment from MacClatchie.

WEAR EVER PUMP PISTONS

● Designed so that wear is absorbed by the rubbers, which are economically replaced for less than half the cost of a new piston.







"MONEY SAVER" PUMP LINERS

● The low first cost and replacement cost of MacClatchie "Money Saver" Pump Liners will surprise you. Hardened and ground for the longest possible wear.

SPECIAL TAPER ROD

● A universal rod with a rod nut of such taper and so designed as to automatically tighten on rod threads and insure a firm grip on the piston. Also made with a regular universal or any standard equipment taper.

MUD PUMP VALVES

● Made of drop forged steel. The seats are accurately ground, wrapped in oil paper and individually sealed in heavy cartons. Cut-out mud ends are unknown to users of MacClatchie Valves. The world's largest selling valve.

VALVE SEAT PULLERS

● Made in two types—Wedge Type (illustrated) a simple but efficient Puller at low price—3 different sizes for pulling all types of valve seats. The DeLuxe type is a quality Puller of correctly heat-treated material—for exerting a powerful pull on any Cross Bar valve seat.

PUMP LINER PULLERS

● Noted for its simple construction and built especially to pull the most stubborn liners, the MacClatchie Puller provides a steady grip and a tremendous pull. Made for all sizes of Liners. Specify when ordering.

CEMENTING

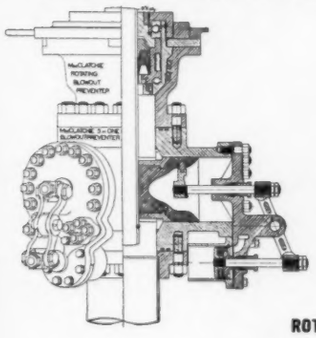
● MacClatchie Quick Union Cement Heads have been adopted as standard equipment throughout the world. Their popularity is due to the fact that they are unquestionably the speediest and most convenient on the market.

QUICK CHANGE CEMENT HEADS AND QUICK UNIONS

● Used the world over where the speediest and most convenient cementing equipment is desired.

MacCLATCHIE HOOK-UP FOR PRESSURE DRILLING

● The MacClatchie Rotating Head and MacClatchie 5 in 1 Preventer make an ideal combination for "pressure drilling." Both units are instantly operatable from the derrick floor.



ROTATING BLOWOUT PREVENTER

● The rotating unit is operated by pulling a rope which is run from the cellar to the derrick floor — latching and unlatching the Kelly Packer instantly. The packer includes the packing assembly and the swivel, with the packing assembly rotatable with the Kelly and swivel, providing anti-frictional bearings for the packing assembly. Designed for drilling under any mud or gas pressure.

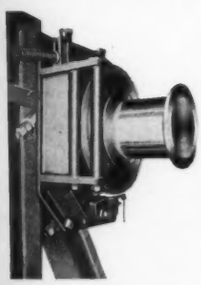
● Both units of the MacClatchie Pressure Drilling Hookup have been designed for the safety of crews. They both operate instantly from the derrick floor, thereby eliminating the hazard of men entering an oil-drenched and gas-filled cellar.

5 IN 1 BLOWOUT PREVENTER

● The "5 in 1" Blowout Preventer is operated by turning a throttle valve—packing off any portion of the string regardless of shape or size, in 55 seconds or less. Since no sand or mud can interfere with its functioning, it has a certainty of action. In no other equipment can be found these features: Adaptability to pack different sizes—phenomenal speed—positive operation.

● Without any change in packing, the MacClatchie "5 in 1" Blowout Preventer will pack off any part of the string, such as Drill Pipe, Kelly, Drill Collar, Tool Joint or Pipe Collar.

GEAROMATIC CATHEAD

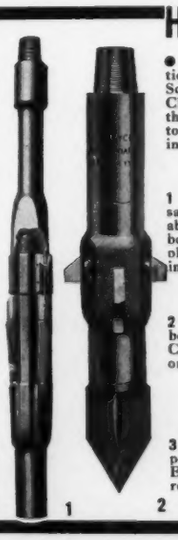


● The MacClatchie Gearomatic Cathead is the only cathead for modern deep drilling and tight joints. Every superintendent, tool pusher or roughneck using the MacClatchie Gearomatic Cathead says it is superior to any other joint-breaking device they have ever used, because it is geared 2 to 1.

PLUG VALVES

● Each model of the MacClatchie Hydro-Seal Plug Valve is designed to easily hold its rated working pressure—turn easier and last longer than any other make of plug valve. Hand or gear operated for working pressure from 250 lbs. to 3,000 lbs.

HOLE CONDITIONING



● Years of experience in building hole-conditioning tools have developed MacClatchie Wall Scrapers, MacClatchie Underreamers and MacClatchie Reamers to the point where they give the best possible performance. When it comes to Wall Scraping, Underreaming and Reaming, insist on a MacClatchie.

MacCLATCHIE ROTARY UNDERREAMER

1 Known the world over for its simplicity and satisfactory reaming qualities. Especially desirable for export operators, as the wear on the body is absorbed by renewable parts. Its simplicity of operation makes it possible for the inexperienced to operate.

MacCLATCHIE WALL SCRAPER

2 Three Cutter Assembly makes a stronger body and insures a true circular bore. Three Cutters eliminate vibration and torsional strains on drill pipe.

MacCLATCHIE ECONOMY REAMER AND STRAIGHT HOLE GUIDE

3 Low cost, long wearing qualities and the impossibility of running flat, makes the MacClatchie Economy Reamer the ideal tool for use as a reamer, a straight hole guide, or a stabilizer.

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MARTIN-DECKER CORPORATION
LONG BEACH CALIFORNIA
San Joaquin Valley: A. F. McQUISTON, Bakersfield, California
Mid-Continent Distributor: REED ROLLER BIT COMPANY, Houston, Texas

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Made in 1½, 3, 5, and 10 gallon sizes.

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WATER CANS & COOLERS

GOTT Water Cans are the practical way to keep drinking water cool for long periods, protected from impurities and always handy to the job. Snug fitting large removable top, strongly built to withstand rough usage. GOTT Water Coolers have extra large covers and a handy non-leaking push button faucet. Your Supply Store has them, get one today!

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WINFIELD, KANSAS
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Part of Wilson-Snyder facilities for planing slush pump fluid ends so that interchangeability of parts is assured

A "sculptor" in an Oilwell foundry troweling down an edge on a sand mold

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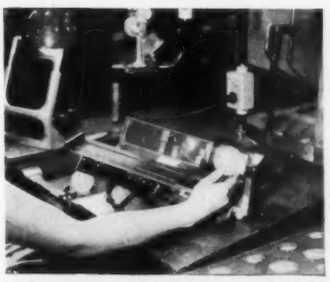
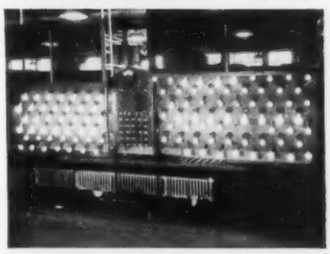
. . . *use lamps that Stay Brighter Longer*

YOU can't save money on light by buying inferior bulbs. "Electric Eye" tests show they often waste as much as 30% of the light you pay for. Instead of saving money when you buy cheaply made bulbs, you usually suffer a loss because of wasted current.

To keep your total light cost as low as possible, MAZDA lamps are carefully made according to precise, scientific standards that are much more severe than Federal Specifications. To insure that such standards are met and maintained, there are 480 different checks and inspections made in the course of manufacture.

Next time you buy lamp bulbs, follow the example of America's shrewdest purchasing agents . . . the men who buy bulbs for the outstanding industrial and commercial concerns, great railroad systems, and public utilities. Specify MAZDA lamps made by G-E . . . the kind that *Stay Brighter Longer* than inferior bulbs and give full lighting value for your money. General Electric Company, Dept. 166, Nela Park, Cleveland, Ohio.





• In addition to its own tests, G-E employs the Electrical Testing Laboratories — the largest independent electrical testing organization in America — to test approximately 10,000,000 MAZDA lamps a year. These tests show the amazing fact that less than 1/10th of 1% have defects that will affect their performance.

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Please send me free of charge your booklet "They Stay Brighter Longer" containing facts about MAZDA lamps.

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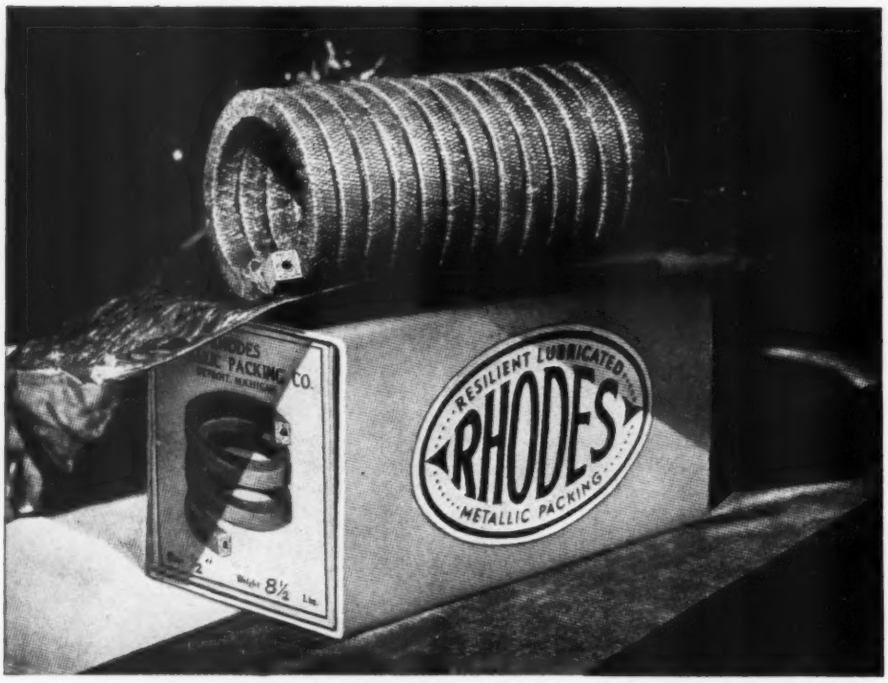


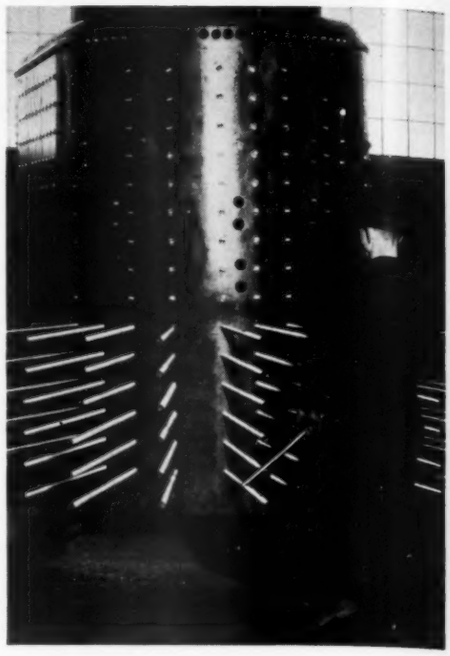
APPLICATIONS OF RHODES METALLIC PACKING

Drilling Equipment—Slush Pumps, (steam end only), Drilling Engines, Steam Rig Lighters and Boiler Feed Pumps (rod, both ends).

Pipe Line Equipment—Discharge Pumps both centrifugal and reciprocating at any speed or pressure (handling either crude oil, gasoline or butane.) Fuel or Spray Valve Stems, Fuel Pump Plungers and Air Bottle Stems for Diesel Engines, Circulating Pumps and Sump Pumps.

Available at Oil Well Supply Co. and other supply companies

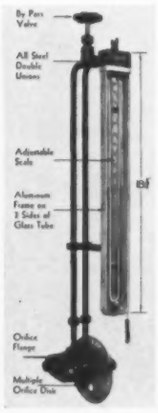
RHODES METALLIC PACKING CO., Detroit, Mich.



Running in stay-bolts to hold the crown and wrapped-sheet plates in position as part of the job of assembling a high-pressure oil-field boiler in the Oswego Works of the Oil Well Supply Co.

Four Flow Ranges With *One* Flow Meter Unit

MERIAM MULTIPLE ORIFICE UNIT



A SINGLE FLOW METER UNIT for checking flows where the range from minimum to maximum exceeds the capacity of one orifice and the operating line pressures do not exceed 200 pounds per square inch.

This unit is extensively used for air flow measurement in the repressuring of oil wells, also for measuring gas and water flows.

The Meriam Multiple Flow Meter consists of a Meriam U-type manometer, orifice flanges, connecting piping with by-pass valve, and a four hole orifice plate that can be quickly changed and centered in the flow line. This unit is complete for installation directly in the flow line.

Write for Bulletin No. 5 containing complete information.

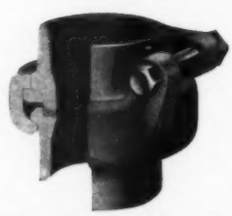
The MERIAM *Co.*

Meriam-made precision instruments for the petroleum industry.

CLEVELAND, OHIO

Representatives and jobbers in principal cities.

. . . however He was a big help to us. When he discovered the principle of leverage he was shooting right down our alley . . . for UNIBOLT Couplings utilize the simple principle of compound leverage to make a quick, positive seal.

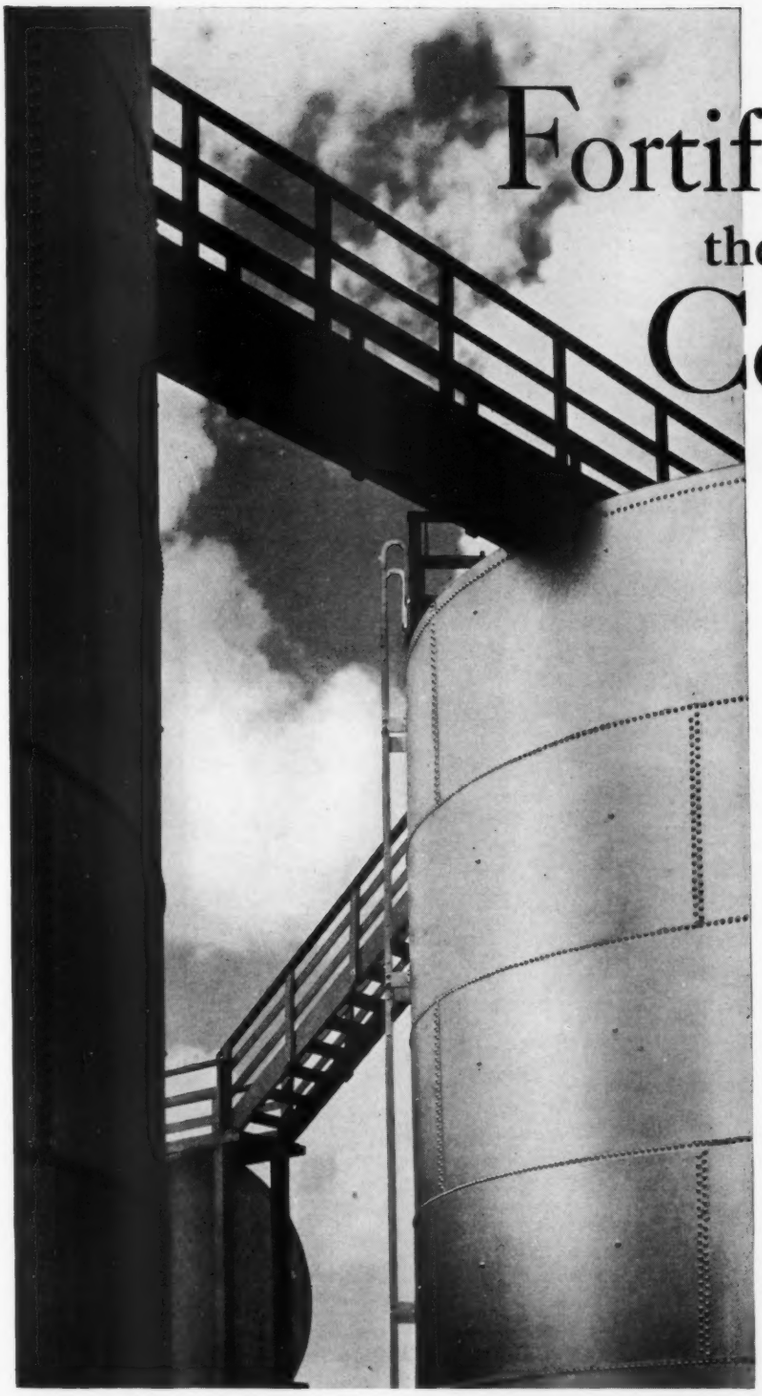


Cutaway of 1000-lb. test Malleable Iron UNIBOLT

The 1000-lb. test Malleable UNIBOLT applies approximately 6½ lbs.* on the seat for every pound applied to the lugs by the bolt . . . and the 6000-lb. test steel UNIBOLT applies approximately 40 lbs.* on the seat for every pound applied to the lugs by the bolt. Let us show you how.

* Less friction.

THORNHILL CRAVER CO.
Houston UNIBOLT Texas



Fortify against the action of Corrosion before it starts

YOU can impede the action of corrosion on your tanks while they're still on the drafting table, if you decide to have them made of USS Copper-Steel Sheets.

Tests have definitely shown that when copper is properly alloyed with steel the resulting alloy successfully retards atmospheric corrosion. The American Society for Testing Materials is authority for this statement, proved under widely varying conditions.

When you want corrosion resistance at nominal cost, specify USS Copper-Steel Sheets for your tanks, drums, roofing and siding, culverts and flumes. These sheets are uniformly made from the finest materials by skilled workmen.

U·S·S *Copper-Steel* SHEETS

CARNEGIE-ILLINOIS STEEL CORPORATION · *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY · *San Francisco*
TENNESSEE COAL, IRON & RAILROAD COMPANY · *Birmingham*
United States Steel Products Company, New York, *Export Distributors*

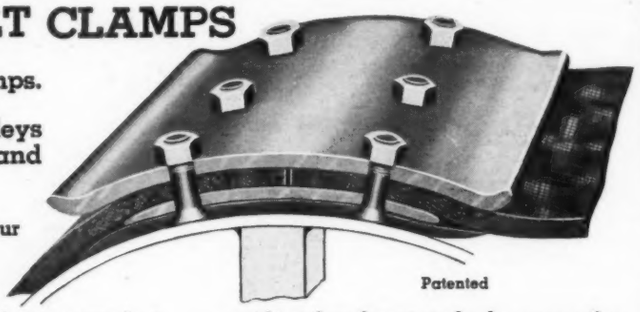
UNITED STATES STEEL

NOBLE BELT CLAMPS

No Slippage at Clamps.

Adjusts Itself to Pulleys of 16″ Diameter and Larger.

Available through your supply store.



Patented

Belts last longer by not being turned at right angles.
Cushion pad keeps weight of metal from hammering belts on pulley, thus avoiding breakage and ply separation at clamp.
No undue stress placed on bolts, thereby reducing breakage.

BOX 2565 **NOBLE CLAMP CO.** TULSA, OKLA.

SEE with SAFETY

Use ECOLITE 50S

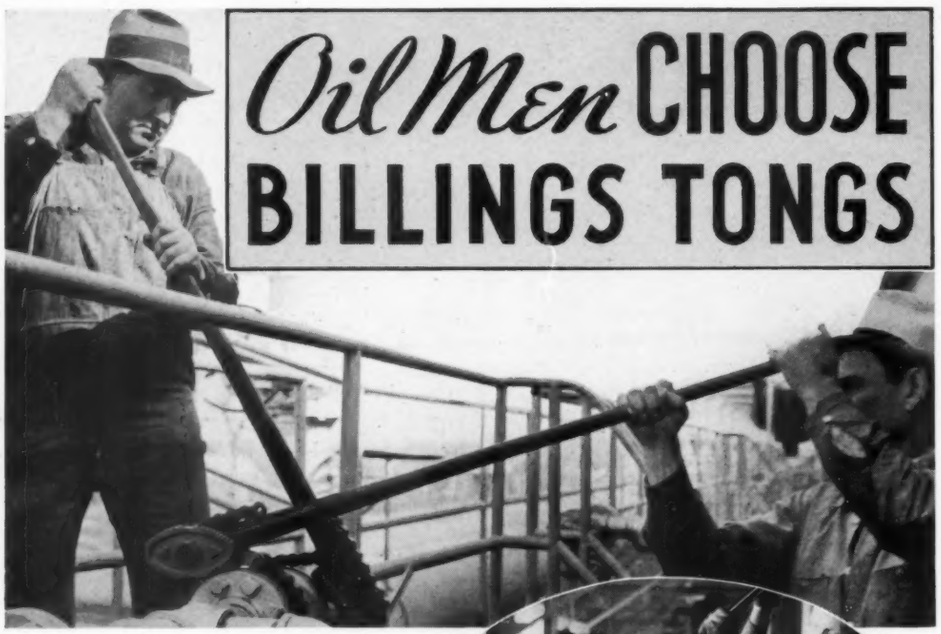
Shoots Bright Spot A Long Distance—

Ecolite 50S is an electric lantern specially designed for Oil Field use. It is safe in presence of inflammable gases and vapors. It's easily carried on the arm, giving freedom to hands. Recommended by Underwriters' Laboratories.

Available at Supply Stores

ECONOMY ELECTRIC LANTERN CO., 325 W. Huron St. Chicago, Ill.

Oil Men CHOOSE BILLINGS TONGS



Red Head Tong and Gardnerench breaking down fittings on a pipe line.

No fittings bead is too narrow for the Gardnerench. The vise is a Billings product, too.

THE Billings Red Head Reversible Chain Tong is supreme for heavy work, and fast work. It will turn a pipe either way without removing the wrench or loosening the chain—double ended outer jaws for double life—removable for fittings work. Available with flat link or cable chain.

The Gardnerench is a thin single jaw double acting tong for pipe and fittings work, with replaceable jaw. Lowest in price, lightest in weight.

We are proud that the 75-year-old Oil Well Supply Company handles Billings Tools.

The BILLINGS & SPENCER COMPANY

Hartford, Connecticut

BRONZE BEARINGS AND CASTINGS

for

THE OIL INDUSTRY

ERIE BRONZE COMPANY

ERIE, PENNA.

TRY THIS NEW LINCOLN!

TRY the new *"Shield-Arc SAE"* with 3/32-inch electrode on 24-gauge sheet or, turn up the heat and use it with 3/8-inch electrode on heavy plate. Just try it on any kind of work . . . in any welding position . . . and you will find this new Lincoln gives the widest range of welding arcs ever afforded by any one welding machine.

You will also find it *easier* to get *better welds* at *higher welding speed* throughout the *"Shield-Arc's"* extra wide range because its Dual Continuous Control permits the choice of *any type* of arc as well as *any size,* to suit each job individually.

This vastly improved welder performance is being realized in every day practice by scores of users of the new *"Shield-Arc SAE."* May we arrange a demonstration for you? The coupon is for your convenience. THE LINCOLN ELECTRIC CO., Dept. N-337, Cleveland, Ohio. Largest Manufacturers of Arc Welding Equipment in the World.

Any TYPE or SIZE of arc.. as simple to get as a station on your radio. Here is the engine-driven "Shield-Arc SAE," *for use out in the field.*

"SHIELD-ARC SAE"

—the New Lincoln Welder with

DUAL *Continuous* **CONTROL**

and Self-Protecting Motor

THE LINCOLN ELECTRIC CO.
Dept. N-337, Cleveland, Ohio

☐ Arrange for us a demonstration of the new *"Shield-Arc SAE"* Welder.

☐ Send Bulletin 412 describing this new welder.

Name.....Position.....

Company.....

Address.....

City.....State.....

FLEXITALLIC Gaskets

. . . are Widely Used in Producing and Refining Oil

Flexitallic Gaskets have a broad field of usefulness in the oil industry in sealing chemically active or inert liquids and gases in the entire working range of temperatures and pressures. Users include producing and refining companies who, in their search for most efficient performance, give severe tests to suggested new equipment.

Applications range from the holding of steam in boilers, pressure vessels and pipe lines to the sealing of highly corrosive fluids. A common example of the latter is the use of Flexitallic Gaskets constructed from selected metal to provide positive, lasting seals for the handling of sour crudes.

STYLES OF FLEXITALLIC GASKETS

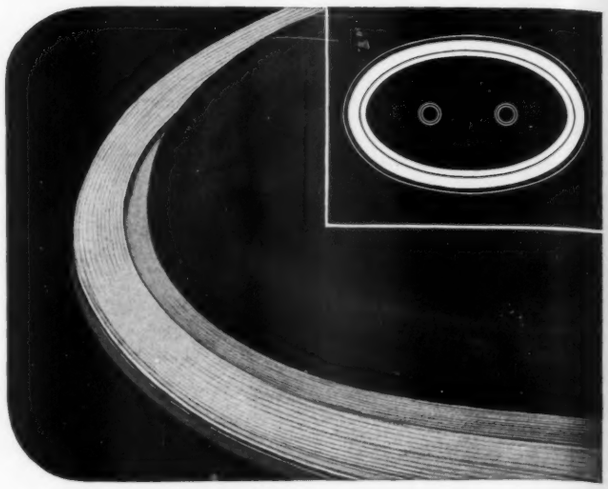
Flexitallic Gaskets, constructed from asbestos interwound with cold-rolled steel, are available in stock sizes for established types of boilers and for standard fittings. Gaskets made to stock sizes but using metal other than cold-rolled steel are made on order and promptly shipped. Gaskets of unusual sizes require special templates, but shipments can be promptly made.

Standard stocks include gaskets for *Manholes, Handholes, Pipe Flanges* and *Tubecaps*. Specifications, except for standard A.S.M.E. sizes, should include a cross-section detail drawing. Briefly describe temperatures, pressures and any special conditions of the service.

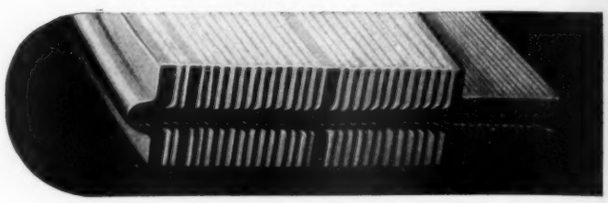
"Flexitallic" REG. U.S. PAT. OFF.

DISTRIBUTED BY
OIL WELL SUPPLY COMPANY
DALLAS, TEXAS

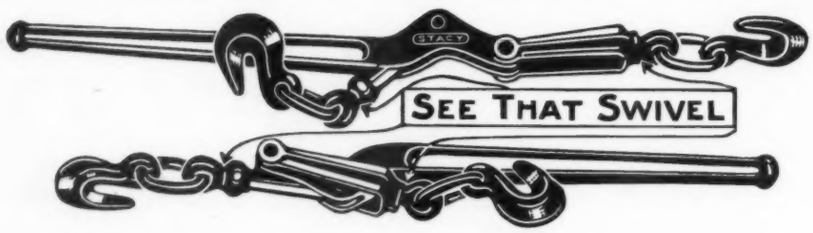
FLEXITALLIC GASKET CO.
8TH AND BAILEY STS., CAMDEN, N. J.



A FLEXITALLIC GASKET applied to a boiler manhole cover. Note centering ring which assures correct seating.



Cross-section of a FLEXITALLIC GASKET showing spiral, interlocking of metal and asbestos. The centering ring (see also upper illustration) is fitted to the gasket at the factory for any standard manhole.



Stacy Load Binders

FASTER, QUICKER, SAFER BINDING Through More Than 40 Years!

A Hundred Uses in Oil Field and Pipeline Work

Bind pipe, rods, tubes, casing, separators, boilers, tank, rails, poles, logs, timbers, lumber, etc. Ideal for wire stretching, straightening, tightening. Useful in braking wagons, trailers, etc. in hilly country without backing up loads to slacken chain.

Prevent Accidents
Save Time and Trouble

SWIVEL Joints make hooks easy to hook anywhere without twisting and subsequent breaking of chain. Made of malleable iron in 19 to 22 inch handle sizes, weighing from 7 to 14 pounds each and fitting any size chain up to ¾ inch, your dealer sells each STACY SWIVEL LOAD BINDER with a "Money Back" guarantee. Recognized by oil field and pipeline equipment users everywhere as the most useful thing of its kind in existence.

Made by EUGENE C. STACY, Tiffin, Ohio.

LUFKIN
TAPES - RULES - TOOLS

"Atlas" OIL GAGING STEEL TAPES

No. 1293S
50 Feet

Designed Especially For Tank Gaging

Steel line ½ inch wide, extra heavy, distinctly and accurately marked - Feet, inches and 8ths.

Equipped with No. 590, 20 ounce solid brass plumb bob. Metal frame is case-hardened. Lock handle. "Atlas" Gaging Tapes are made in four lengths 25, 33, 50, and 66 feet.
To get the most complete, most practical and durable gaging outfit, specify "Atlas" with 599 Wiper.

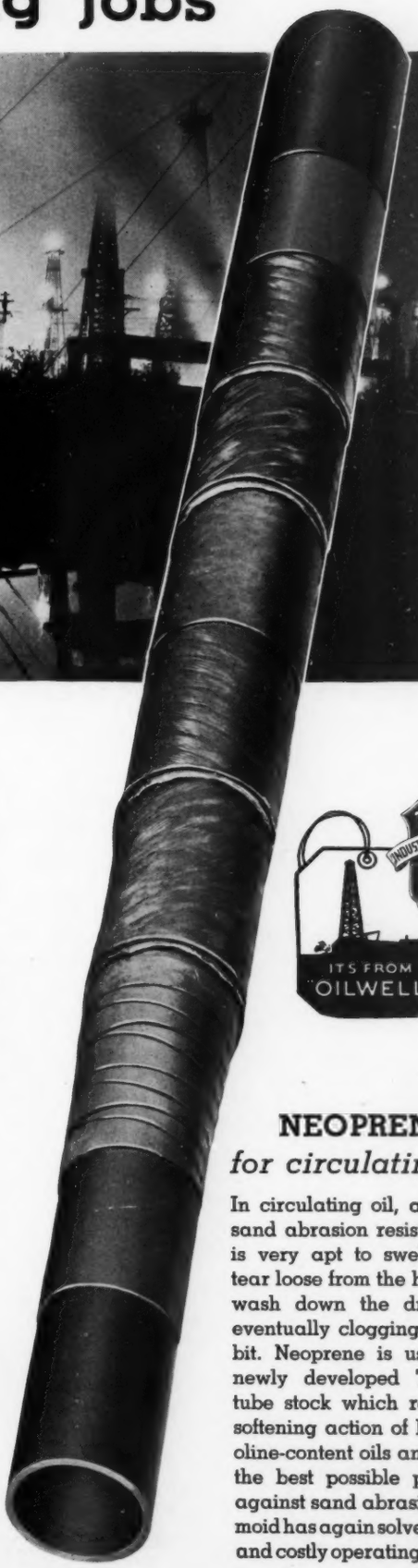
★

See Listings in Composite Catalog of Oil Field and Refinery Equipment.

SEND FOR CATALOG NO. 12

THE LUFKIN RULE CO.
SAGINAW, MICHIGAN
106-110 Lafayette St., New York City

Thermoid Engineers multiply by two for these tough drilling jobs



A new Rotary Hose for deep pressure work

Again, Thermoid pioneers—this time with a greatly improved rotary hose construction for deep pressure drilling that has already demonstrated substantial operating economies. And, still the story can only be half-told, because some of the first lengths sent into the field are still piling up service records.

This rotary hose embodies an exclusive Thermoid construction. Layers of uniformly machine-wound, high tensile wire, embedded in and surrounded by a "super-cushion" of rubber, resist high pressures,—plies of heavy cotton duck, impregnated with the same rubber cushion stock, withstand flexing and shocks. The hose is built with a special sand abrasion resisting rubber tube for regular drilling. When specified, it is furnished with a newly developed Thermoid Neoprene* tube for circulating oil.

Get the full story of this new Thermoid Rotary Hose. There are six different types, each specially designed for a specific service. The Oil Well Supply Company man will be glad to help you select the type best suited for your particular service.

NEOPRENE*
for circulating oil

In circulating oil, a regular sand abrasion resisting tube is very apt to swell badly, tear loose from the hose, and wash down the drill pipe, eventually clogging the drill bit. Neoprene is used in a newly developed Thermoid tube stock which resists the softening action of high gasoline-content oils and affords the best possible protection against sand abrasion. Thermoid has again solved a tough and costly operating problem.

Thermoid

PRODUCTS FOR THE OIL INDUSTRY

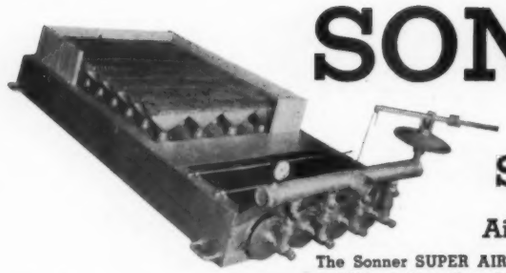
Distributed by

OIL WELL SUPPLY COMPANY

Branches in All Oil Fields

ROTARY HOSE • AIR, STEAM, WELDING, REFINERY HOSE • PACKINGS
PUMPING AND DRILLING BELTS • BRAKE LININGS AND BRAKE BLOCKS

SONNER OIL FIELD BURNERS



SONNER
Super
Air-Cooled Burner

The Sonner SUPER AIR-COOLED Burner may be quickly and easily adjusted to burn natural or artificial gases with the highest efficiency, without extinguishing the fire.

This burner incorporates the advantages of the Air-Cooled head with its own Super flexibility, which enables it to obtain good combustion under the most difficult firing conditions.

The Sonner Super Air-Cooled Burner is equipped with an adjustable needle valve orifice and adjustable primary air shutter, which makes it possible to obtain the exact proportion of gas and air desired. The scientifically designed venturi allows sufficient air to be entrained and thoroughly mixed with the gas.

The Sonner Super Air-Cooled Burner may be ordered as a complete boiler unit, as shown in the specifications and photograph, or special assemblies for unusual types of installations may be had on special order.

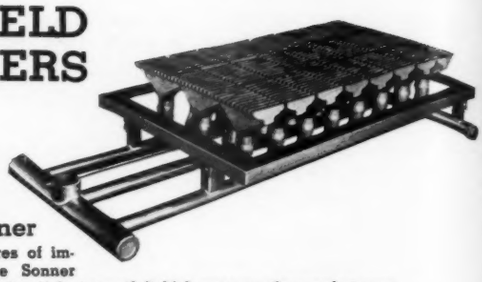
When ordering please state the horsepower rating of your boiler and the dimensions of the grate opening.

FOR OPEN BOTTOM BOILERS

Nominal Boiler H.P.	Super Air-Cooled Burner Number	Grate Dimensions Width	Grate Dimensions Length	Standard Air-Cooled Burner Number	Grate Dimensions Width	Grate Dimensions Length	Gas Pressure Required to Develop Boiler Rating	Gas Pressure Required to Develop 100% Boiler Overload
65	LV-15	30½"	36"	L10-12	28"	30¼"	1½ lb	5 lb
75	LV-15	30½"	36"	L10-15	30½"	35"	1 lb	4½ lb
90	LV-15	30½"	36"	L10-18	30½"	42"	1 lb	4½ lb
90	LV-24	30½"	56"	L10-24	30½"	56"	½ lb	2¼ lb
100	LV-24	30½"	56"	L10-24	30½"	56"	¾ lb	3 lb
125	LV-24	30½"	56"	L10-24	30½"	56"	1 lb	4½ lb

FOR SEMI-WATER BOTTOM BOILERS

50	LV-10	20½"	36"	L10- 9	21"	30¼"	1¼ lb	5½ lb
60	LV-10	20½"	36"	L10-12	28"	30¼"	1 lb	4½ lb
75	LV-15	30½"	36"	L10-15	30½"	35"	1½ lb	5½ lb
100	LV-15	30½"	36"	L10-18	30½"	42"	1 lb	3¾ lb
125	LV-21	30½"	49"	L10-21	30½"	49"	1¼ lb	5½ lb



SONNER
Standard
Air-Cooled Burner

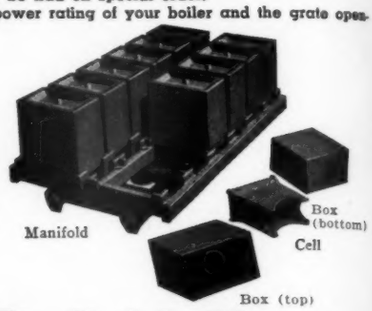
Some of the many features of importance that render the Sonner Air-Cooled Burner the most satisfactory oil field burner on the market are:

1. The deep slot construction of the Air-Cooled Sonner Burner Head permits the lowest possible turn down without danger of flash back, and the unusually large cooling surface in the burner head prevents the deep slot from overheating.
2. The Unit is completely automatic with respect to the air control and when used with a steam-actuated boiler fuel governor requires little or no attention. When you are ready to move, lift out the burner heads; disconnect the gas line; pull out the chassis and again you are all set—just a matter of a few minutes work. The rugged, durable construction assures long life even under the worst conditions. It is engineered to stand abuse.
3. The Sonner Air-Cooled Burner is engineered for oil field service; built to stand the gaff and yet as sensitive to changing load conditions as the most delicate measuring instrument.
4. The Sonner Standard Air-Cooled Burner is built in sizes to cover a range of boilers from the 50 H.P. to 125 H.P. as indicated in the accompanying table. Special sizes and arrangements of burner units may be had on special order.

When ordering please state the horsepower rating of your boiler and the grate opening dimensions.

SONNER
Perfecto Burner

The original reverse flow, oil field burners on the market for over 13 years, established as the leaders in the conversion oil field boilers.



SEE PAGE 1627 COMPOSITE CATALOG OF OIL FIELD AND PIPE LINE EQUIPMENT

THE SONNER BURNER COMPANY, Winfield, Kansas

FOR SALE BY OIL WELL SUPPLY CO. *STORES EVERYWHERE*

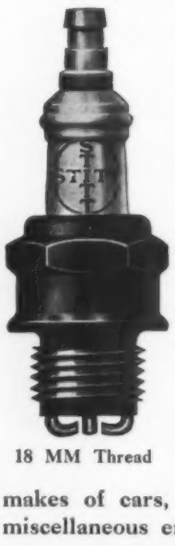
S T I T T

SUPERIOR

SPARK PLUGS

PATENT NO. 1957397

No. 10



18 MM Thread

This No. 10 Superior one-piece type plug is giving extraordinary service in Ford V-8 cars and trucks, models 1933 to 1937, incl.; also in other makes of cars, trucks and engines. Other Stitt superior one-piece types of plugs are as follows:

No. 8—⅞" regular

No. 9—⅞" long

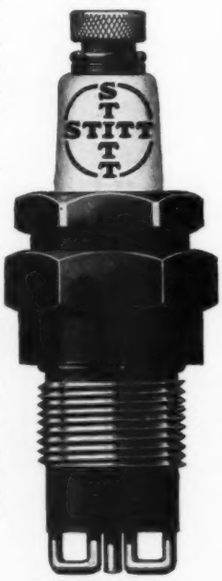
No. 11—14 MM Regular for all other makes of cars, trucks, tractors and miscellaneous engines.

This No. 19 Superior Heavy Duty plug is giving extraordinary service in Cooper-Bessemer, Clark and other gas engines.

Other Stitt Superior Heavy Duty gas engine plugs are:

No. 15—½" regular
No. 17E—⅞" regular
No. 24—½" ex. long
No. 26—⅞" ex. long
No. 27—¾" long
No. 28—¾" ex. long
No. 31—Regular, ¾" straight thread, referred to as 1-1/32", also as ¾" Whitworth straight pipe thread, or HR ¾" thread.

No. 19



⅞" Thread—Long

WRITE OR ASK YOUR SUPPLY COMPANY STORE FOR STITT ILLUSTRATED AND DESCRIPTIVE FOLDER.

FOR SALE BY THE OIL WELL SUPPLY COMPANY AND ALL OTHER LEADING OIL AND GAS FIELD SUPPLY STORES.

STITT IGNITION CO., MANUFACTURERS, COLUMBUS, OHIO

CHICAGO RAWHIDE
Mechanical Leather
Packings

Stop Back Leaks
Maintain Pressure

Whether you're handling it hot or cold—are pumping water, air or gas "Chicago Rawhide" will cut your losses, hold up pressure and minimize shut downs. Made of special hides selected from a world market for their *mechanical* characteristics, treated and tanned to give exactly controlled factors of hardness, heat, pressure and wear resistance, etc. and accurately formed to size and shape. Each is exactly suited to its specified work . . . is certain to give long, satisfactory service.

Specify "Chicago Rawhide" when ordering Belt Lacing . . . "SELECTED Cut Lacing," hand cut from carefully selected (mechanically tanned) hides, stretched, tested and guaranteed non-deteriorating, absolutely dependable.

Weighted Malleable Iron heads with insert faces of tough water buffalo hide. Strike powerful, accurate, non-marring, non-sparking blows. All sizes. Also light Rawhide Mallets and heavy mauls.

SAFE!
Non-Sparking
Hammers
Mallets
Mauls

Write for Catalog

CHICAGO RAWHIDE MFG. CO.
1308 Elston Ave.
Chicago, U.S.A.

Whether it called for supplying a drilling boiler on top a hill in Bolivia or providing a complete drilling rig in Alaska, Oilwell handled the job

SCHWEITZER

Octagon Wood Rods and Wrought Iron Forged Couplings

PROUD OF OUR PRODUCT

WE have always concentrated all of our attention upon and devoted all of our energies toward doing one thing as perfectly as humanly possible: the making of octagon wood rods together with their wrought iron forged couplings.

Today—as always—the user of this Schweitzer sole product knows that he has the best that money can buy; that year after year Schweitzer Rods and Couplings do not vary in quality and that he can depend upon them for excellent service.

Rod sizes 1⅛" to 3½"; coupling and wrench square sizes ⅝" to 1½" for pipe sizes 2" up to 10". Random lengths 14 to 22 feet.

Distributed by
OIL WELL SUPPLY COMPANY

Made by
SCHWEITZER WOOD ROD CO.
Poplar Bluff, Missouri

TYPE PS2, ROTARY DRIVE WITH FROM 1 TO 7 FEEDS

Standard Equipment on all eccentric type "OILWELL" Oilbath Geared Powers

NATHAN

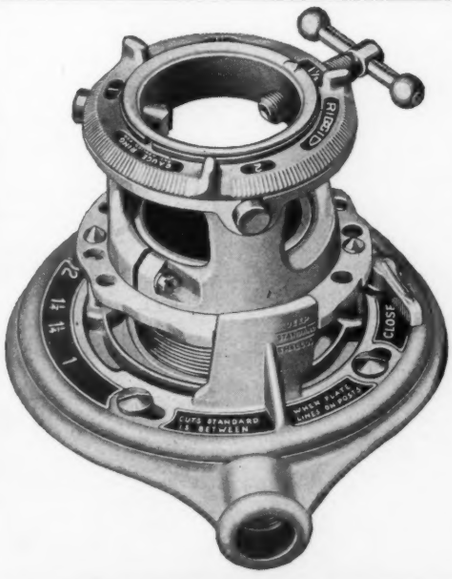
VALVELESS MECHANICAL LUBRICATORS

TYPE PS3, RATCHET DRIVE WITH FROM 8 TO 11 FEEDS

Standard Equipment on "OILWELL" No. 12 and 12D vertical Twin-Cylinder Steam Engines

In Nathan Mechanical Lubricators only one piston is used for each feed, actuated by an ingenious drive that reciprocates and simultaneously oscillates the piston. It pumps oil and at the same time opens and closes suction and discharge ports. No valves are used. Positive delivery of measured quantities of oil is assured wherever lubrication is needed. Oil can be fed against pressure from zero to 500 pounds per square inch—higher when required.

NATHAN MANUFACTURING COMPANY, NEW YORK



NO MORE CHANGING DIES

This No. 65R RIDGID Die Stock Threads 4 Sizes of Pipe (1", 1¼", 1½", 2") With 1 Set of Dies

Simply change the setting post on this RIDGID No. 65R and go ahead.

True accurate threads, all variations. New type self-contained work-holder: turn arrow on knurled gauge ring to pipe size, put on pipe, tighten one screw.

Direct pull over dies. Plenty of chip room. Feet to stand it up.

Illustrated: RIDGID No. 65R, back view. Made also as No. 85R with 2 handles.

Ask your Supply Store.

THE RIDGE TOOL CO., ELYRIA, OHIO, U.S.A.

A RIDGID PIPE TOOL

Manufactured by the makers of RIDGID guaranteed housing that saves you

Pipe Wrenches—the wrench with the fully 75% of your pipe wrench repairs.

SANITARY WIPING CLOTHS WASTE

American Paper Stock Co.

Box 1364
Tulsa

Box 2781
Dallas

EVERY TIME THE NAIL SHEARS
IT'S MONEY IN YOUR POCKET!

A SHEAR-RELIEF Valve has never popped yet except at a profit to the user. The smallest saving effected by relieving excess pump pressure is more than the cost of the valve, yet no part of the valve s damaged when the nail is sheared except the nail itself . . . . and you know the price of common nails. All of the wide popularity of this valve does not come from its positive action and ease of handling. It is definitely an economical investment, either for slush pump or smaller pump service.

Left: High pressure type, for slush pump service. Right: Low pressure type, for boiler feed pumps, or similar service.

Directions on the valve name-plate give setting nstructions, including pressures for each nail size and nail gauge. If pump pressure against the valve piston reaches the set point the nail shears, the piston travels out of the path of released fluid, and you merely re-set the valve with another nail.

FLUID-PISTON SLUSH PUMPS
ABERCROMBIE PUMP CO.
GULF BLDG. HOUSTON TEX.

SHEAR-RELIEF VALVE

AS BUSY AS BEAVERS!

In the past few years, 36 completely new tools have been developed by us—and substantial improvements made in 18 established tools . . . . in order to better serve the requirements of pipe tools users throughout the world.

BEAVER PIPE TOOLS

237 OLGA AVE. *The Quality Line—Since 1900* WARREN, OHIO

Established 1887

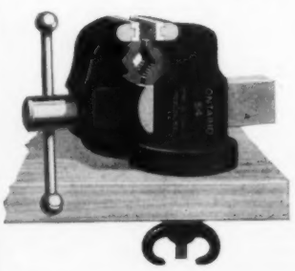
OSWEGO TOOLS

Oswego Dudgeon Roller Tube Expander

This expander has a solid body, thus avoiding constant breaking of cap screws. It is made from the best material and with great care. One expander will answer for any thickness of tube sheet. We carry a large stock and can ship promptly. The Oswego Dudgeon is the strongest and best expander of this class on the market.

This expander is furnished with round head mandrel for hand use.

Oswego Combination Vise



This vise meets all requirements for service, efficiency and stability—made in 3 sizes.

Thousands of them in use in the Oil and Gas Industries.

Send for catalog and further information on our complete line of Tools.

INTERNATIONAL NUTYP TOOL CORPORATION

OSWEGO, NEW YORK
Successors to OSWEGO TOOL CO.

It's a WISE habit to renew your Journal subscription promptly

EST. 1870 WALL WAUK LAID ROPE

Complete stocks of Oil Field Cordage carried in Mid-Continent and Gulf Coast Fields

WALL ROPE WORKS, Inc.
Houston, Texas
2000 Nance St. Telep. Cap. 0244

Among Gulf Coast Drilling Contractors

New activity starting along the Gulf Coast continued to be centered in proven area with only one wildcat announced. This is in Wharton County by the Texas Co. Humble Oil & Refining Co. has started No. 7-C Grawunder at the Raccoon Bend field, is building derrick for No. 16-A Stewart in the Dickinson field, and has started No. 2-B Cobb at the Tomball field. Portilla Drilling Co. is starting No. 4-C P. H. Welder in the Heyser field while in the Boling field, Mack Hank Oil Co. is moving in two rigs for Nos. 4-C and 3-B Farmer. Thompson Drilling Co. has spudded No. 1 R. J. Sick in the Markham field and Union of California is scheduled to start No. 3 J. M. Keeran in the Keeran field in Victoria County. With the exception of a flank test in the Clay Creek and another in the Withers field by the Virginia Oil Co. and Texas Co. respectively, the balance of the new work as reported in Placedo field by Barnsdall Oil Co., Crown Central Oil Co., Superior Oil & Gas Co. and Westgate Oil Co.

Glenn H. McCarthy has reached contract depth at Drunella Oil Co. No. 1 Cardwell at Vermilion Parish and is now shut down while in Matagorda County his No. 1 Foley is holding attention of operators after rumors of oil and gas showings at 7,802 feet. He has moved a rig to the West Beaumont field for No. 3-B Long and has one rotary running at a work-over job at the Cotton Lake field in Chambers County.

Smith & McDannald are moving in a rig to the East Hayes Prospect in Jefferson Davis Parish for Stanolind Oil & Gas Co. No. 1 United Life & Accident Insurance Co. which has been held up due to high water. One test at the Louise field has been abandoned for the Pure Oil Co. and operations have started on two wells at the Dickinson field for the same company. In the meantime progress is being carried on in Conroe, South Houston, Sorrento, Long Lake and Jennings fields for the Houston Oil Co., Stanolind Oil & Gas Co., Tide Water Oil Co., Pan American Production Co. and Shell Petroleum Corp.

Cron & Gracey received contracts for two deep tests in the St. Martinsville field in St. Martin Parish, Louisiana, for the Continental Oil Co. and in the Dickinson field in Galveston County, Texas, for Stanolind Oil & Gas Co. The latter test will be in the southwest extension area and on the Dameani lease. Fohs Oil Co. No. 1 State located in Terrebonne Parish is being rigged up. Other activities are centered in the South Houston, Placedo, Rockport, Hitchcock, West Columbia and Roanoke fields for Shell Petroleum Corp., Humble Oil & Refining Co., Stanolind Oil & Gas Co. and Barnsdall Oil & Refining Co.

Nicklos Drilling Co. is nearing the pay at the New Valentine field in Lafourche Parish, Louisiana, having passed the 6,400-foot level, and has spudded in No. 3 Harang. Both wells are being drilled for the Pan American Production Co. For the same company at the Port Barre field, No. 3 Cormier is drilling in shale below 6,420 feet. Continental Oil Co. No. 3 P. O. Johnson has been spudded while the same company's No. 9-A Homeseekers Development Co. is drilling ahead in a sidetracked hole.

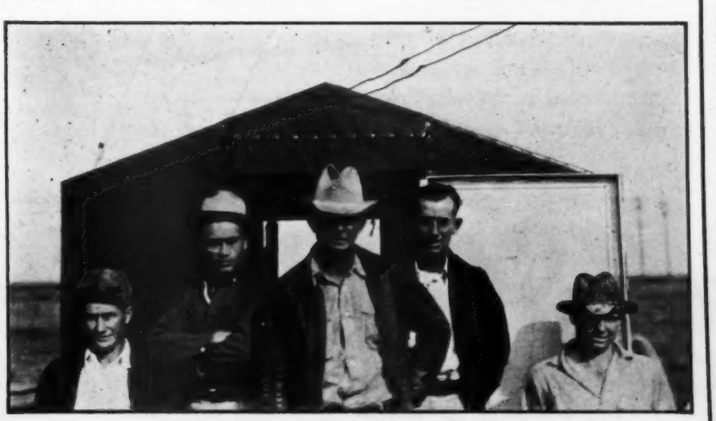
Harry L. Edwards is nearing the pay at the Dickinson field in Galveston County on Coast Petroleum Co. No. 5 Maco Stewart, while near the town of El Campo in Wharton County, Sam Harrison No. 1 Byerly is drilling below 3,300 feet.

With the construction of an 8-mile pipe line outlet into the Sandy Point field in Brazoria County, recently opened by H. J. DeArman No. 1 Fite, new activity is expected to get under way during the next few weeks.

Harrison & Dillard have cemented a protection string of casing in the old Hockley salt dome in Harris County and plug is being drilled preparatory to drilling deeper. One rig is active in the new Clinton field in the same county while two rigs are running at the Hastings field in Brazoria County. All strings of tools are operating for the Stanolind Oil & Gas Co.

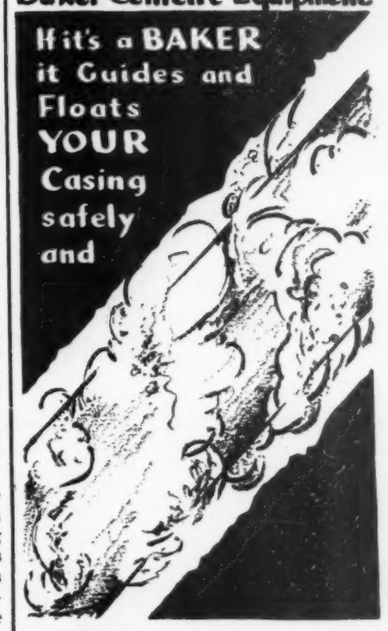
W. Claude Smith received contract from the Texas Co. for a wildcat, and tools are being moved into Wharton County for No. 1 E. A. Wheatherer situated 5½ miles southeast of the town of Hilje in the L. P. Ogden Survey. He has one rig running at

(Continued on Page 237)



Night crew of Harry L. Edwards Drilling Co., taken just before going on duty at Dickinson field, Galveston County. R. A. Brumbelow, Ben Bell, C. H. Traweek, Robert Allen and Ted Nolen

Baker Cement Equipment



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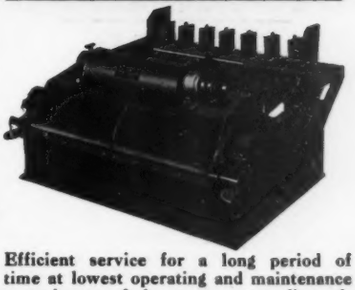

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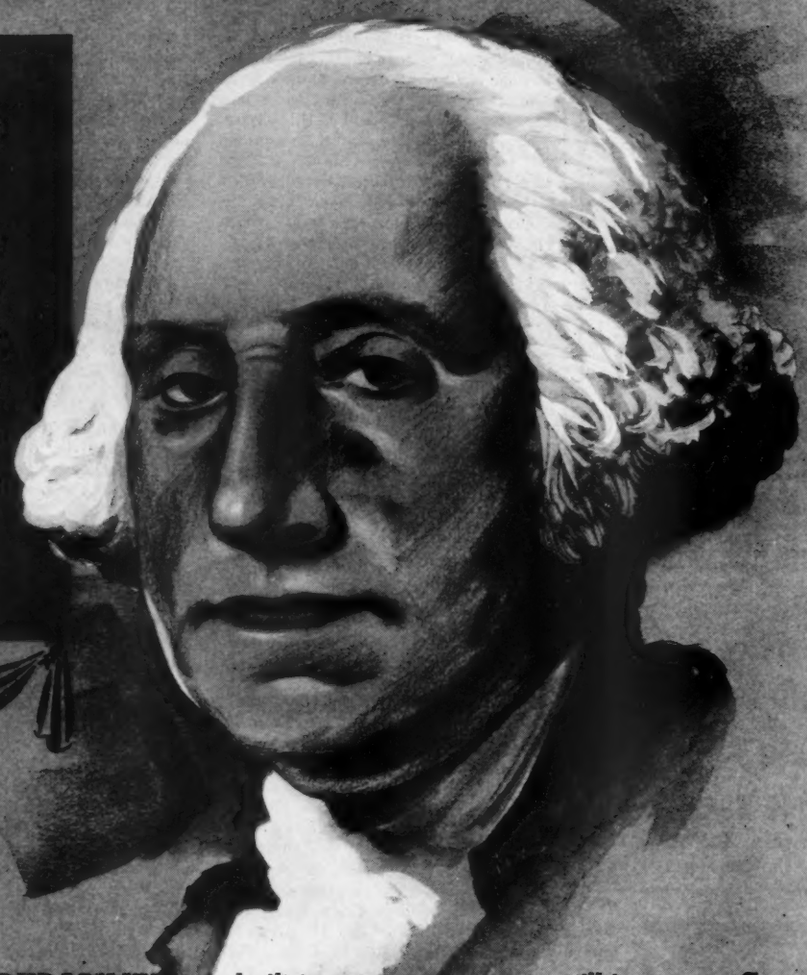

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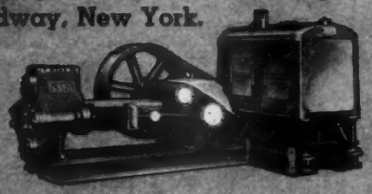

Fig. 1740 Gaso Duplex Piston Timken Bearing Power Pump 54 to 250 Bbls.

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FIELD OPERATIONS

Summarizing the Week's Developments

The Talco pool in Titus and Franklin counties, Texas, continues to increase in production and in new operations. The field was extended on the east side in the past week. In West Texas a wildcat in southern Ector County showing production, a half-mile extension to the old Cowden pool in Crane County and a new pool discovery in Andrews County were the high lights. An important discovery was made in Wilbarger County in North Texas where a deep sand well is in that looks good for 2,500 to 3,000 bbls. per day. It was an old producer deepened to 3,071 feet, bottomed in a sandy lime formation. In Southwest Texas drilling is on the increase and the district leads in completed work in the state. The Taft field in San Patricio County may be extended westerly by a test showing oil in cores. In the Gulf Coast field Matagorda County in Texas and Terrebonne Parish in Louisiana have prospects of new pools.

LOUISIANA-TEXAS

Conservation measures in the Rodessa field in North Louisiana and eastern Texas have lowered production but have greatly benefited the field by the saving of reservoir pressure. New locations in favorable looking spots in Louisiana, Texas and Arkansas point to a very busy late winter and spring in the tri-state district. The most interesting test in all the Mid-Continent, being drilled on the Lodi structure in Marion County, Texas, is being carefully handled as it nears completion. The Jefferson discovery well in the same county may be temporarily completed as a gas well to furnish fuel for drilling thereabouts.

KANSAS

Three large producers were completed in the Trapp field, Russell County, Kansas. The Bloomer pool, Barton County, added two large oil wells. The Graber pool, McPherson County, was extended westward. A Cowley County wildcat found small production in the Chat.

OKLAHOMA

Wildcats were completed to open a shallow oil pool in Coal County, Oklahoma, and a gas area in Texas County, Oklahoma Panhandle. A 26,448-bbl. well was completed in the Moore field, Cleveland County. Twelve new oil wells were completed and 14 new tests were started in the Fitts field, Pontotoc County.

MICHIGAN

High prices paid for leases in the Buckeye field in Gladwin County, at a recent sale of Michigan state lands, attests the high regard operators have for that new oil area. A good showing of oil in an outpost test in southern Beaverton Township, Gladwin County, strengthens hope of an extension of producing acreage. Two good completions were reported from the Clayton pool, Arenac County.

CALIFORNIA

The Arvin district in Kern County, California, southeast of Mountain View, proved oil bearing but the discovery well fell off from 250 bbls. to 80 bbls. in two days and may be on the edge of a pool. The oil is cut 51 per cent. The third well in the Ten Section field started at 2,350 bbls. of oil and 2,500,000 feet of gas and the old Midway-Sunset field yielded a 250-bbl. well at 2,048 feet.

COLORADO

A new well that extends the Powder Wash field in Moffat County, Colorado, started at 30 bbls. per hour through casing.

Completions in All Fields

(Week Ending February 20, 1937)

	Oil	Gas	Dry	Total	1937 total comp. to date	1936 total comp. to date
Penna. Grade Fields	47	20	8	75	465	361
Lima Field	0	0	0	0	9	10
Central Ohio	5	9	4	18	124	37
Kentucky	0	0	0	0	17	25
Indiana	1	0	1	2	26	27
Illinois	0	0	0	0	1	6
Michigan	5	2	6	13	108	98
Kansas	21	0	10	31	274	182
Oklahoma	41	4	8	53	345	334
North Central Texas	18	0	20	38	352	328
West Texas	42	0	4	46	323	166
Texas Panhandle	13	2	0	15	86	93
East Central Texas	4	0	3	7	87	37
East Texas	47	0	0	47	295	379
East Texas border	7	0	0	7	69	2
Gulf Coast Texas	16	0	5	21	165	138
Southwest Texas	52	2	19	73	476	289
Total Texas	199	4	51	254	1,853	1,432
North Louisiana	3	1	0	4	56	79
Gulf Coast Louisiana	9	0	2	11	58	44
Total Louisiana	12	1	2	15	114	123
Arkansas	0	0	1	1	10	17
Montana	0	0	0	0	12	15
Wyoming	4	0	0	4	15	12
Colorado	0	0	0	0	3	5
New Mexico	13	0	2	15	99	59
Utah	0	0	0	0	0	1
California	9	1	9	19	183	159
Total United States	357	41	102	500	3,658	2,903
Total previous week	311	45	113	469		
Difference	46	4	11	31		

Outstanding Fields—Highlights

(Week Ending February 20, 1937)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Anahuac	2	6	1	656	152	11,993
Hastings	4	10	2	1,104	139	11,687
Loma Novia	1	6	5	850	659	15,795
Seven Sisters	2	4	1	650	374	8,745
Saxet	6	31	13	1,950	379	26,085
Lopez	2	3	5	2,555	286	6,950
East Texas	45	101	47	1,692	22,149	453,487
Talco	15	30	4	1,347	207	18,314
OKLAHOMA						
Oklahoma City	3	26	1	129	1,094	147,900
Fitts	6	54	12	8,418	627	81,450
Burbank-So. Burbank	1	2	0	0	2,164	23,475
KANSAS						
Ellis County	5	11	0	0	79	5,410
Reno County	5	28	0	0	366	20,296
Russell County	11	52	5	7,812	585	25,350
Rice County	13	46	7	2,814	703	44,811
NEW MEXICO						
Lea County	8	99	12	2,891	2,030	93,465
LOUISIANA-TEXAS						
Rodessa, La.	3	15	2	1,056	349	49,325
Rodessa, Tex.	3	46	7	4,252	205	38,200
Gillis, La.	2	4	1	234	58	16,050
Tepetate, La.	1	3	1	170	40	5,437
MICHIGAN						
Porter-Yost	2	5	1	100	429	13,188
Crystal-Montcalm	4	7	0	0	149	3,032

Eastern Field Report

By STAFF CORRESPONDENT

DEEP TEST IN ROANE COUNTY FAILS; SOME GOOD GASSERS

PITTSBURGH, Pa., Feb. 20.—Another important deep test in West Virginia has proved a failure. In Geary district, Roane County, Godfrey L. Cabot, Inc., on the T. F. Smith farm drilled 20 feet into the Oriskany sand and it was void of oil or gas and was making about 1 bailer of water an hour. The top of the Corniferous lime was at 5,794 feet; the Oriskany sand at 5,975 feet, or at this location 181 feet of lime. This test is located on the west flank of Chestnut Ridge on a left fork of Big Sandy near Uler Postoffice. It was also north of the present Oriskany gas field in Kanawha County.

Other deep tests are being drilled outside of the proven areas. The deepest at present is that of Godfrey L. Cabot, Inc., on the Allen Hardman farm in Center district, Calhoun County, which has reached 5,268 feet. This operator is down 4,165 feet on the Walter Hoffman farm in Burnings Springs district, Wirt County. In Grant district, Hancock County, John T. Galey is drilling a deep test on the Rachael Talbot farm, but it has not as yet reached the Berea.

SOUTHEAST OHIO

Twelve operations were completed in Southeast Ohio during the week. In Belmont County, T. J. Reese's second test on the L. A. Ridgway and Sutton farm, section 31, Richland Township, was good for 15 bbls. a day from the Berea sand at 1,861 feet. In the northwest quarter of section 25, same township, Barnesville Development Co. completed a 300,000-foot gasser on the Dr. John A. Clark farm in the Berea sand at 1,950 feet. In section 27, Mead Township, Newell Phillips drilled a dry hole on the W. J. Phillips farm through the Berea sand to 1,950 feet.

In Guernsey County, the Beers Oil & Gas Co. completed a test on the Minnie Beers farm, Cambridge Township, in the Berea sand at 1,275 feet. It was drilled for gas but is producing about 3 bbls. of oil a day.

In Holmes County, the Ohio Fuel Gas Co. test on the B. C. Bird farm, Lot 20, Monroe Township, got Clinton sand at a depth of 3,454 feet. It made a gas well gauging 400,000 feet a day. In section 25 of Richland Township, this company drilled a failure on the Louise Vernon farm through the Clinton sand to 3,225 feet.

In Licking County, the Preston Oil Co. completed No. 3 Baughman, section 11, Mary Ann Township, in the Berea sand at 646 feet. It is showing for a 2-bbl. pumper.

In Lorain County, the Kemrow Co. completed a test on the Schneider and Wyles lease, Lot 62, Columbia Township, in the Clinton sand at 2,683 feet. It is a gas well good for 750,000 feet a day. In the same lot and township, this company completed a 1,330,000-foot gas well on the Mary Walker farm in Clinton sand, depth 2,677 feet. In Lot 24, Grafton Township, the Ohio Fuel Gas Co. test on the Morris Nesbit farm completed a Clinton sand gasser, total depth 2,571 feet, gauging 48,000 feet a day.

In Medina County, the E. R. Edson and Son Co. completed a dry hole on the Hayden Coe farm, Tract 9, Lot 3, Chatham Township, through the Berea Grit to 450 feet.

In Perry County, the Mid-East Gas Co. completed a second test on the H. W. Williams farm in the northwest quarter of section 18, Clayton Township, in the Clinton sand at 3,210 feet. It is a gas well gauging 350,000 feet a day and will not be shot at present. It is also making some oil.

Deep Tests

One mile north of Lowellsville, Poland Township, Mahoning County, Harold C. Phillips and others on the Richard and Bell Fenton farm are drilling at 3,930 feet, or 145 feet in the Corniferous lime. It is a deep test.

In section 28, Madison Township, Columbiana County, the Natural Gas Co. of West Virginia has had difficulty drilling through the Corniferous lime in the test on the Albert Ketchum farm. At 171 feet in this formation the tools are in a crevice.

SOUTHWEST PENNSYLVANIA

One dry hole, three gas wells and one producer were completed in Southwest Pennsylvania during the week. In South Franklin Township, Washington County, A. V. Lewis and others completed a test on the William Mankey farm at a total depth of 2,975 feet. The Fifth sand was at 2,878-95 feet with about 10 bbls. of oil a day at 2,955 feet and a show of gas at 2,879 feet.

In this township, the Carnegie Natural Gas Co. drilled a test on the Dickerson (James Pipes) farm through the Fifth sand to 2,979 feet and it was a dry hole.

In South Strabane Township, Washington County, the Manufacturers Light & Heat Co. on the George Burig farm completed a gas well gauging 2,500,000 feet a day at a depth of about 2,800 feet.

In Amwell Township, Washington County, the Penn Ohio Oil & Gas Co. completed a test on the J. A. Russell 11-acre tract at a depth of 1,778 feet. The First Salt sand was topped at 1,706 feet with about 330,000 feet of gas at 1,769 feet. The rock pressure is 450 pounds.

In Greene County, the Dunn Mar Oil & Gas Co. completed No. 2 Kuhn heirs farm in Springhill Township at a depth of 1,835 feet, the First Salt sand. It is a gas well gauging 260,000 feet a day.

In this township, the Northeastern Ohio Oil & Gas Co. has started drilling on the J. W. McNichols farm. Null & Moorhead are down 1,750 feet in a test on the John Barger farm.

In Dunkard Township, Greene County, the Carnegie Natural Gas Co. has reached 1,807 feet in a test on the Ella B. Parker farm. The Big Injun sand was at 1,680 feet with about 29,000 feet of gas at 1,794-95 feet. On the Dale Brabd farm, this company is down 788 feet with a show of gas in the Murphy sand.

In Richhill Township, Smith McCracken is drilling at 3,050 feet on the Willis A. Campbell farm. In Wayne Township, the Manufacturers Light & Heat Co. has reached 1,830 feet on the Kiger test. In Gilmore Township, this company is drilling at 2,810 feet on the Hoy farm, and in Springhill Township, is building a rig for a No. 7 on the Strope farm.

In Amwell Township, Washington County, South Penn Oil Co. is building rig for No. 4 J. Q. Zimmerman. Carnegie Natural Gas Co. is reaming hole at 158 feet in the No. 2 N. B. Redd, and hauling in a rig to deepen the Menzer farm well. The Union Gasoline & Oil Co. is drilling on the C. H. Miles farm at 200 feet. Bloom and others are down 2,718 feet on the Clyde Hinerman farm. In South Franklin Township, Perin & Co. are at 2,330 feet on the B. A. Bonham farm. The Big Injun sand was at 1,786-2,064 feet with a show of gas at 1,798-1,800 feet and water at 1,821-50 feet.

WEST VIRGINIA

Three oil wells were completed in West Virginia during the week. In Clay County, the Virginia Gasoline & Oil Co. completed No. 38 on the Brown, Swan, Goshorn and Geary tract in Henry district in the Injun sand at 1,920 feet. It is starting off at 30 bbls. a day.

In Ritchie County, Buchannon and others completed a second test on the Winifrede Woods farm in Murphy district in the Salt sand at 1,810 feet, good for 5 bbls. a day.

In Wirt County, W. C. Patterson completed No. 24 on the C. E. Vandevander farm in Clay district in the Cow Run sand at 325 feet. It will make a 1-bbl. pumper.

Oriskany Gas Field

Three deep tests were completed in the Oriskany field in Kanawha County. In Poca district, the United Carbon Co. completed 4,190,000-foot gas well on the L. E. Campbell farm at a total depth of 4,845 feet. On the Ahaz Spencer farm No. 2, reported coming in last week, the Oriskany sand was at 5,028-66 feet and the gauge shows 4,475,000 feet a day with a rock pressure of 1,785 pounds.

In Elk district, the United Fuel Gas Co. completed No. 4,656 on the A. J. Bruen and others lease at 5,126 feet, Oriskany sand. The gauge was 4,989,000 feet a day with a rock pressure of 1,290 pounds.

In Malden district, Columbian Carbon Co. completed No. 15, or second deep test, on the W. D. Lewis tract. The top of the Corniferous lime was at 4,740 feet with the top of the Oriskany sand at 4,847 feet and gas at 4,847-52 feet. The present gauge is 3,400,000 feet a day with the tools still in the hole.

In Malden district, Godfrey L. Cabot, Inc., has reached the top of the Corniferous lime in No. 11 on the Campbells Creek Coal Co. lease at 4,929 feet and shut down. The United Fuel Gas Co. is drilling at 5,123 feet in No. 4,658 on the Georges Creek Land & Mining Co. and 3,899 feet in the No. 4,679.

There were three new locations in the Oriskany field during the week. In Poca district, the Columbian Carbon Co. has a location for a test on the Boggess heirs farm on Grapevine Creek. The elevation is 796.2 feet. Everett Starcher and others has a location for a test on the Greenbury Samuels farm, same district, and on Turkey Pen Branch. The elevation here is 747.51 feet.

In Elk district, the United Fuel Gas Co. has spudded in No. 4,706 on the C. B. Graham farm. The Columbian Carbon Co. has started drilling the second test on the W. L. Burdette farm. The Yoak Oil & Gas Co. is spudding in No. 3 on the Goshorn heirs farm. Eleven other wells are drilling at various depths in this district. In Poca district, four wells are drilling and two rigging up.

Other Gas Fields

In Boone County, the Owens Illinois Glass Co. completed a second test on the V. G. Vandelinde farm in Scott district at a total depth of 2,118 feet as a gas well gauging 139,000 feet a day.

In Calhoun County, the Hope Natural Gas Co. completed No. 7,747 on the L. J. Smith farm in Center district as a gas well. The Big Lime was at 1,808-65 feet; the Big Injun at 1,865-1,906 feet.

(Continued on Page 220)

Texas and Louisiana Gulf

By
F. L. SINGLETON

NEW POOLS IN PROSPECT IN WIDELY SEPARATED AREAS

HOUSTON, Tex., Feb. 22.—While preparations were being made to test a prospective pool opener in Coastal Louisiana, interest along the Gulf Coast for the time being is centered on a wildcat north of the town of Palacios in Matagorda County, where unconfirmed rumors of an oil show has set off an extensive leasing and royalty-buying campaign. The well is Glenn H. McCarthy No. 1 Gregory Foley, out of the southwest corner of a 160-acre tract in section 19 of the Lewis Goodwin Survey. At the close of the week the hole was bottomed at 7,802 feet and it was being washed to bottom. Detailed information on the test has been withheld by the operators, but at this depth the hole should be bottomed close to the Frio sand and several cores are reported to have been taken. With the exception of a few scattered pieces, the majority of the acreage is controlled by the Sun Oil Co.

The Silsbee field, Hardin County, was extended 1,800 feet to the south by the completion of Republic Production Co. and Houston Oil Co. No. 1 Ellery, which flowed 295 bbls. of 40-gravity oil per day through a three-sixteenths inch choke with tubing pressure 1,000 pounds and casing pressure 1,575 pounds. Production is from the Upper Cockfield sand through perforated casing at 6,833-48 feet. The hole was originally carried to the lower sand at a depth of 6,973 feet and was plugged back and completed after a drill-stem test in that section showed oil and salt water. Interest is now centered on another outpost test, No. 7 Brooks, 3,100 feet east of the nearest production, where casing is being cemented at a total depth of 6,949 feet, preparatory to testing through perforations slightly below 6,900 feet. A drill-stem test made in the upper sand at 6,894-6,914 feet showed dry gas with 550 pounds of working pressure.

Beaty, Bowles & Borsodi No. 1 Frank Truska, on the Chocolate Bayou Prospect, Brazoria County, which reached a depth of 10,082 feet, has been plugged back to 5,600 feet and will test a sand shown on an electrical coring test through perforated casing at 5,575-82 feet. Nine and five-eighths inch casing was previously cemented at 6,430 feet and the Miocene section will be tested through perforated casing.

New Producing Horizon

In the Old Ocean field, Harrison & Abercrombie continued coring operations at No. 3 Bernard River Land & Development Co., below 10,323 feet, although a good sand section showing oil and gas has been cored from that depth. From 10,275 to 10,281 feet sand showing oil was cored; sand and shale showing oil was cored at 10,293-301 feet, and sand and shale showing oil and gas at 10,306-308 feet. This practically assures the field of its third producing horizon, the other sands being at 8,600 and below 9,900 feet.

In the South Cotton Lake area, Chambers County, Salt Dome Oil Corp. cemented 7-inch casing at 6,525 feet in No. 1-B Lawrence and preparations were being made to perforate and test at 6,493-98 feet. Salt water was recovered on a drill-stem test in a lower sand at 6,526-32 feet, the total depth. This area is about 3 miles south of the Cotton Lake field, and the above test is the third to have been drilled. One well is producing distillate from the 6,400-foot sand and another was abandoned. Location is in the S. Barrow Survey.

Hamman Exploration Co. No. 1 J. H. Crocker, 2,400 feet north of the discovery well of the Bay City field, Matagorda County, perforated casing with 40 shots at 8,949½-56½ feet and on a drill-stem test at 8,940-56½ feet, it showed 50 thribbles of salt water and it is now shut down waiting for cement to set after setting a cement retainer at 8,940 feet.

Texas Crusader Oil Corp.'s No. 1 fee, discovery well of the Magnet field, Wharton County, has been cored to a depth of 6,518 feet, and the hole plugged back to 5,000 feet, where it will be sidetracked and redrilled to approximately 5,500 feet, at which depth a production test will be made. This well was completed in September, flowing 5 bbls. of oil per hour through perforated casing, but started showing salt water and after attempts to case off the water failed, it was drilled deeper.

In the same county and located 5½ miles southeast of the town of Hilge, the Texas Co. is moving in material for No. 1 E. A. Wheatherer, 660 feet south and 660 feet east of the northwest corner of the lease in the L. P. Ogden Survey.

Jefferson County

In the West Beaumont field, Jefferson County, Stanolind Oil & Gas Co. No. 1 Sargl, originally completed for a wet gasser several weeks ago and recently worked over was plugged back to 5,376 feet and was completed through perforated casing at 5,347-64 feet, and is now swabbing 140 bbls. of 27 gravity pipe line oil per day. Glenn H. McCarthy is preparing to spud No. 3-B Longe located 150 feet out of the northeast corner of a 100-acre tract. To the south at Amelia, Humble Oil & Refining Co. No. 2 R. J. Peveto topped sand at 6,760 feet and is bottomed at 6,781 feet with 7-inch casing cemented at 6,781 feet. Locations were made by the company for No. 2 M. Lefler in the Amelia Heights Subdivision No. 2, for No. 1 Industrial Investment Co., center of Lot No. 8, Unit 1-B of the C. Williams Survey. To the southwest in the Nome field, Shell Petroleum Corp. No. 4 Paggi topped oil sand at 6,016 feet and is being tested at a total depth of 6,055 feet. The Sun Pipe Line Co. has completed its 20-mile pipe line from the field to Beaumont and was scheduled to start running crude the first of the week.

After making a four-minute drill stem test which showed mud, cut with gas, Humble Oil & Refining Co. No. 1 Jefferson Land Co., located on the Cheek Prospect, Jefferson County, was being drilled ahead. The hole was bottomed at 8,232 feet and a string of 7-inch casing was cemented at 8,162 feet.

In the Ace field, Polk County, Peyton Brothers' No. 2-B Kirby & West, 657 feet east of No. 1-B, a producer, is coring ahead after a drill stem test tested 500 feet of salt water with a slight show of oil, with 50 pounds of working pressure. No. 1-B was completed through perforated casing at 4,858-62 feet for an initial production of 80 bbls. per day and is now reported making a small percentage of salt water. To the east at Segno, J. K. Dorrance has spudded No. 2 Wing located west of the discovery well in the I.&G.N. Survey No. 15. Southwest of the discovery well, S. J. Ryan's 10-acre tract on which two locations had been made, was purchased by the Gulf Oil Corp. and the locations have been abandoned.

With the purchase of a 23.37-acre tract of land in the northwest extension area of the Dickinson field, Galveston County, Atlantic Refining Co. has made application for a permit to drill No. 1 C. O. Anderson, a south offset to Diadem Oil Co. No. 1 Way in the P. G. Merritt Survey. At a recent hearing before the Railroad Commission, some of the operators in the field expressed the opinion that this area is producing from a sand separated from the main field by a fault and asked that the area be prorated separately.

South Houston Field

Stanolind Oil & Gas Co. No. 2 J. C. Kelley, Tract 141, H.T.&B. Survey, South Houston field, Harris County, is bottomed in the Miocene sand at 4,000 feet and 6⅝-inch casing has been cemented at 3,962 feet. A hearing before the Railroad Commission will be held in Austin February 27 to consider evidence to determine whether acreage should be continued as a factor in fixing allowables in this field. Until the past week the allowable was on a per well basis, but an order issued after the field was brought in in 1935 was put into effect. The original spacing rule was set on the field when it appeared that the producing limits were confined to the townsite, and units of 18 acres or four city blocks were designated. However the producing limits have extended outside of the townsite and in most cases the tracts are split up into five-acre pieces which has complicated the spacing program, and some of the operators have objected to the cut in allowable.

Louisiana Coast

Along the Louisiana Coast, Shell Petroleum Corp. was running screen at No. 1-B Realty located at the Cocotriz Prospect in Terrebonne Parish and the outcome of this prospective pool opener should be known by this week. With the hole bottomed in sand showing oil at 9,483 feet, and 7-inch casing cemented at 9,457 feet, another 10-foot core was taken, of which 3½ feet of gray sand showing oil was recovered. On a drill stem test last week at 9,461-83 feet, it showed 12 bbls. of 37 gravity oil with 200 pounds of working pressure which practically assures the well of opening another deeply-seated structure. Location is in section 19-17s-15e.

In the same parish and approximately 24 miles to the southeast, on the north flank of the Houma gas field, Humble Oil & Refining Co. was drilling below 9,006 feet at No. 1 Ellender which has already shown favorable indication of production on an electrical coring test between 8,100 and 8,400 feet. A string of 9⅝-inch casing was cemented at 8,735 feet which is thought to be the longest string of this size casing ever cemented.

At the North Starks Prospect, Calcasieu Parish much interest was centered on D. D. Oil Co. No. 1 Lutcher Moore, as preparations were made to run an electrical coring test at 7,010 feet, after an odor of oil and gas was reported to have been detected. The well topped the Discorbis at 4,684 feet, Heterostegina at 4,745 feet, Frio at 4,961 feet and Vicksburg at 6,728 feet. The test is about 6 miles north of the town of Starks on a block of 7,250 acres centering around section 1-8s-13w.

At the Abbeville Prospect, Vermilion Parish, Continental Oil Co. No. 1 O. C. Hebert has reached the testing stage again after the operators were successful in recovering all of the special 2½-inch tubing that became stuck due to excessive gas pressure when the well was first tested several weeks ago. The bit on bottom of the special flush-joint casing at 11,795 feet has been milled off and the hole is being cleaned for another test. It is understood that an attempt will be made to core the bottom hole formation at 12,216 feet before making a screen setting. On the East Erath Prospect, section 41-13s-4e, Drunella Oil Co. No. 1 Cardwell is shut down waiting on orders at 8,100 feet.

In the Graben area of the Gillis field, Calcasieu

(Continued on Page 224)

Rocky Mountain Area

By
T. R. INGRAM

MONUMENT FIELD EXTENDED; EDDY WILDCAT SHOWING OIL

DENVER, Colo., Feb. 22.—The Mountain Fuel Supply Co. No. 1 Stewart, in the Powder Wash field, northwestern Colorado, is reported unofficially to have flowed 30 bbls. an hour through the 10-inch casing at 3,113 feet. A big lease play in northwestern Colorado and southwestern Wyoming is developing as a result of these discoveries, the first of importance in Tertiary beds in the Rocky Mountain area, and several wildcats are expected to start shortly.

In Wyoming, the Murphy Oil Co. No. 5 Holst, on the Quealy dome, was temporarily completed in the Dakota for 9 bbls. per hour. The Wood-Callahan Oil Co., Ltd., of California, has contracted for a rotary test on the Paintrock structure in Big Horn County. The Baggs area in Carbon County will have a deep test this spring. The Carter Oil Co. is preparing to go to the Sundance and possibly deeper in the Billy Creek gas field in Johnson County. The Ohio Oil Co. No. 9 Lamb, in the Lance Creek field, flowed 56 bbls. first 30 minutes. Two wells were completed, one for 2 bbls. and the other dry, in Hidden dome.

Montana operations, which have been almost at a standstill on account of cold, are preparing to resume as soon as the weather moderates.

The Columbia Crude Corp. wildcat in Grand County, Utah, is preparing to test an interesting show of oil in the Paradox formation.

NEW MEXICO

A Lea County wildcat was showing as a pool extensioner and an Eddy County, New Mexico, wildcat apparently was opening a new oil pool.

Empire Oil & Refining Co. and Repollo Oil Co. No. 1 Brunson, NW NW SE section 4-22-37, Lea County, flowed 101 bbls. of oil in 34 hours and was acidized, but had not been tested following acidizing. Total depth was 3,750 feet. It will extend the Hardy lime pool 2½ miles south.

In Eddy County, Neil H. Wills No. 1 Colglazier, C NW NE section 20-20-30, may open a new area east of the Getty pool. It topped pay at 1,442 feet; total depth, 1,443 feet, and swabbed 37 bbls. of oil in two hours.

The Monument pool was extended several locations to the south and west at Shell Petroleum Corp. No. 1 State E, C NE NW section 13-20-36. It topped pay and was completed at 3,885 feet, total depth. After acidizing, it flowed 132 bbls. of oil in six hours, with 1,250,000 feet of gas.

Other Monument completions: Ohio Oil Co. No. 8 Barber, C SW NW section 5-20-37; total depth, 3,900 feet; acidized; flowed 35 bbls .of oil in one hour. Gulf Oil Corp. No. 2 Whitmire, C NW NE section 8-20-37; pay, 3,830 feet; total depth, 3,891 feet; acidized; flowed 182 bbls. in three hours. Same company's No. 2 Anderson, C NE NW section 17-20-37; pay, 3,806 feet; total depth, 3,865 feet; acidized; flowed 283 bbls. in four hours. Phillips Petroleum Co. No. 1 Patsy, C NW NE section 18-20-37; pay, 3,803 feet; total depth, 3,855 feet; flowed 182 bbls. of oil in one hour, naturally. Shell Petroleum Corp. No. 4 State B, C SE NW section 36-19-36; pay, 3,784 feet; total depth, 3,939 feet; acidized; flowed 230 bbls. in four hours.

Completions in the Eunice area: Amerada Petroleum Corp. No. 1 State W, C SE NE section 30-20-37; pay, 3,736 feet; total depth, 3,835 feet; acidized; flowed 502 bbls. of oil in six hours. Gulf Oil Corp. No. 6 Orcutt C, C NE NW section 6-21-36; pay, 3,750 feet; total depth, 3,847 feet; acidized; flowed 267 bbls. in six hours. Same company's No. 2 Campbell, C NE SW section 7-21-36; pay, 3,805 feet; total depth, 3,900 feet; acidized; flowed 180 bbls. in six hours. Two States & Southern Petroleum Exploration Co. No. 1 McQuatters, C NW SE section 11-21-36; pay, 3,784 feet; total depth, 3,886 feet; acidized; flowed 333 bbls. of oil in 12 hours. Gulf Oil Corp. No. 4 Bell-State C, C SE NW section 15-21-36; pay, 3,753 feet; total depth, 3,875 feet; acidized; flowed 306 bbls. in six hours. Texas Pacific Coal & Oil Co. No. 3 State A, Account 2, C SW NE section 8-22-36; pay, 3,700 feet; total depth, 3,885 feet; acidized and shot; flowed 219 bbls. in one hour.

In the Jal area, Continental Oil Co. No. 3-A-19 Eaves, C N half NW SW section 19-26-37, topped pay at 3,115 feet, was bottomed at 3,192 feet, acidized and flowed 40 bbls. in one hour.

C. L. Carlock and others No. 1 Quincy Ricker, C SE SE section 7-16-36, wildcat 3 miles southwest of the Lovington area, Lea County, was dry and abandoned at 5,512 feet. total depth.

John Baldridge and others No. 1 Blakey, C NW NE section 5-20-38, wildcat 4 miles southeast of the Hobbs field, had a hole full of water and was dry and abandoned at 4,430 feet, total depth.

The Quaker State Oil Co. of Pampa, Tex., has contracted with H. T. McGee, Amarillo, for 15,000 acres of the McGee block on the San Jon structure, in the San Jon Valley east of Tucumcari, in Quay County. The Quaker State company agreed to drill an oil and gas test well in the center of the 23,000-acre block, of which Mr. McGee retined 7,500 acres, and was preparing to start operations by March 1.

Monument Area

Skelly Oil Co. No. 2 State F, C SW SE sec. 17-20-37. Drlg. 900 ft.
Continental Oil Co. No. 1 Britt B, C NE NW sec. 8-20-37. T.D. 3,871 ft.; to deepen.
Gulf Oil Corp. No. 2 Kutter A, C NW SE sec. 20-19-37. T.D. 4,002 ft.; S.D. for orders.
Ohio Oil Co. No. 1 Laughlin, sec. 9-20-37. Drlg. 3,764 ft
Amerada Pet. Corp. No. 1 Love, C NW SE sec. 32-19-37. T.D. 3,895 ft.; running tubing.
Amerada Pet. Corp. No. 2 Anderson, C SE SW sec. 8-20-37. Drlg. 3,585 ft.
Amerada Pet. Corp. No. 2 Phillips, C NE SW sec. 33-19-37. T.D. 3,765 ft.; set 6⅝-in. csg.
Amerada Pet. Corp. No. 2-W State, C SW NE sec. 30-20-37. T.D. 3,850 ft.; testing.
Continental Oil Co. No. 1-B-18 Britt, C NW NW sec. 18-20-37. T.D. 3,775 ft.; testing.
Gulf Oil Corp. No. 2-F Graham-State, NE NE sec. 36-19-36. T.D. 3,908 ft.; swbg.
Gulf Oil Corp. No. 2-B Kutter-State, C NW NW sec. 28-19-37. T.D. 3,978 ft.; testing.
Gulf Oil Corp. No. 3 Sunshine, C NE SW sec. 30-20-37. Drlg. 3,725 ft.
Gulf Oil Corp. No. 1-B Weir, C NW SE sec. 26-19-36. T.D. 3,995 ft.; testing.
Oil Well Drlg. Co. No. 1 Wood-State, NW¼ sec. 16-20-37. Drlg. 3,823 ft.
Oil Well Drlg. Co. No. 2 Wood-State, NW sec. 16-20-37. Cellar and pits.
Tide Water Oil Co. No. 2-I State, C NE SW sec. 16-20-37. Drlg. 3,345 ft.
Continental Oil Co. No. 3-A-17 State, C NW SW sec. 17-19-37. Drlg. 3,035 ft.
Anderson-Prichard Oil Co. No. 7 Britt, SE NW SE sec. 7-20-37. T.D. 2,440 ft.; set 9⅝-in. csg.
Anderson-Prichard Oil Co. No. 8 Britt, C SW SE sec. 7-20-37. Drlg. 3,200 ft.
Tide Water Oil Co. No. 2 State I, C NE SW sec. 16-20-37. Cellar and pits.
Amerada Pet. Corp No. 3 Byrd, sec. 3-12-20. Drlg. 2,110 ft.
Amerada Pet. Corp. No. 3 Larson, sec. 32-19-37. Drlg. 3,150 ft.
Atlantic Ref. Co. No. 2-M State, sec. 36-20-36. Drlg. 3,818 ft.
General Crude Oil Co. No. 1-G State, sec. 16-20-37. Drlg. 2,886 ft.
Gulf Oil Corp. No. 3 Anderson, sec. 8-20-37. Drlg. 3,314 ft.
Magnolia Pet. Co. No. 2 Cary, sec. 21-22-37. Drlg. 2,450 ft.
Repollo Oil Co. No. 5 Barber, sec. 7-20-37. Cellar and pits.
Shell Pet. Corp. No. 1-M State, sec. 1-21-35. T.D. 3,797 ft.; to test.
Texas Co. No. 2-J State, sec. 24-19-36. Drlg. 3,548 ft.
Amerada Pet. Corp. No. 4 Larsen, sec. 32-19-37. Drlg. 2,956 ft.
Texas Co. No. 1 Cook, SW NE NE sec. 32-19-37. Drlg. 1,371 ft.
Humble O. & R. Co. No. 3 Laughlin, sec. 4-20-37. Drlg. 3,836 ft.
Continental Oil Co. No. 2 Britt B, sec. 18-20-37. Drlg. 2,890 ft.
Continental Oil Co. No. 3 Britt B, sec. 18-20-37. Drlg. 2,706 ft.
Phillips Pet. Co. No. 1 Mexico, NE cor. sec. 18-20-37. Drlg. 325 ft.
Continental Oil Co. No. 11 Sanderson A, C SE SE sec. 11-20-36. Drk.
Amerada Pet. Corp. No. 4 Byrd, C NE NW sec. 12-20-36. Drlg. 2,366 ft.
Gulf Oil Corp. No. 2 Hatchett, C SW NW sec. 33-19-37. Cellar and pits.
Gulf Oil Corp. No. 3 Whitmire, C SE NW sec. 8-20-37. T.D. 241 ft.; set 10-in. csg.
Gulf Oil Corp. No. 4 Whitmire, C SE NE sec. 8-20-37. Drlg. 3,072 ft.
Skelly Oil Co. No. 2 Van Etten, C SW SW sec. 9-20-37. T.D. 1,130 ft.; set 9⅝-in. csg.
Skelly Oil Co. No. 3 Van Etten, C SE SW sec. 9-20-37. Drlg. 1,637 ft.
Humble O. & R. Co. No. 1 State F, C NE SW sec. 17-20-37. Drlg. 2,683 ft.
Gulf Oil Corp. No. 3 Graham-State F, C NW SE sec. 36-19-36. Bldg. rig.
Amerada Pet. Corp. No. 6 Andrews, C SW SW sec. 12-20-36. Rig.
Gulf Oil Corp. No. 1 Orcutt C, C SW SE sec. 36-20-36. Drlg. 1,085 ft.
Barnsdall Oil Co. No. 7 Cooper, C NW SW sec. 7-20-37. Drlg. 2,258 ft.
Gulf Oil Corp. No. 4 Anderson, C NW NE sec. 17-20-37. T.D. 307 ft.; set 10-in. csg.
Ohio Oil Co. No. 3 State-McGrail, C NE SW sec. 26-19-36. Bldg. rig.
Gulf Oil Corp. No. 4-F Graham State, C SW SE sec. 36-19-36. Derrick.
Amerada Pet. Corp. No. 5 Byrd, C SE NW, sec. 12-20-36. Drk.
Amerada Pet. Corp. No. 1 Laughlin, W½ NW NW sec. 9-20-37. Cellar and pits.
Gulf Oil Corp. No. 5 Anderson, C SE NW sec. 17-20-37. Cellar and pits.
Phillips Pet. Corp. No. 2 Mexico, C SW NE sec. 18-20-37. Cellar and pits.
Superior Oil Corp. No. 1 State B, C NE SE sec. 13-20-36. Loc.

Chaves County

J. & L. Drilling Co. No. 1 Hurd, C SE NW sec. 14-11-26. Drlg. 90 ft.

Eunice Area

Getty Oil Corp. No. 1 State D, C SE NE sec. 32-20-37. T.D. 3,860 ft.; S.D. for orders.
Gulf Oil Corp. No. 2 Sunshine, C SE SW sec. 30-20-37. T.D. 3,840 ft.; to acidize.
Gulf Oil Corp. No. 4 Collins, C NE SW sec. 14-21-36. T.D. 3,880 ft.; to shoot.
Gulf Oil Corp. No. 4 Houston, C NW SE sec. 7-21-36. T.D. 1,260 ft.; set 7⅝-in. csg.
Gulf Oil Corp. No. 4-C Janda-State, C NE SW sec. 15-21-36. T.D. 3,765 ft.; flowed 208 bbls. in 6 hrs.; acidized.
Gulf Oil Corp. No. 4 Leonard, C SW NE sec. 22-21-36. Drlg. 3,898 ft.
Bert Fields et al No. 1 Turner-State, SW SW NE sec. 32-20-37. T.D. 3,847 ft.; flowed 21 B.O. in 24 hrs.
Continental Oil Co. No. 18-B-4 Meyer, C NW NE sec. 4-21-36. Drlg. 3,805 ft.
Continental Oil Co. No. 4-D-11 State, C NE SW sec. 11-21-36. Drlg. 3,078 ft.
Texas Co. No. 3 Rector, NE NW SE sec. 30-21-36. Drlg. 3,374 ft.
Jim Murray No. 4 State-Wallace, sec. 3-21-36. Cellar.
Shell Pet. Corp. No. 3 State K, C SW NE sec. 36-20-36. Drlg. 3,107 ft.
Humble O. & R. Co. No. 10 State-Aggies, sec. 31-20-37. Drlg. 3,830 ft.
Gulf Oil Corp. No. 1 Bell-Ramsey B, C SW SW sec. 29-20-37. Bldg. rig.
Gulf Oil Corp. No. 5 Leonard, C NE NE sec. 22-21-36. Drlg. 19 ft.
Amerada Pet. Corp. No. 3-W State, C SW NE sec. 30-20-37. Cellar and pits.
Amerada Pet. Corp. No. 4-W State, C SE SE sec. 30-20-37. Cellar and pits.
Continental Oil Co. No. 7-D-15 State, C NW SE sec. 15-21-36. Drlg. 800 ft.
Gulf Oil Corp. No. 12-C Arnott-Ramsey, C NW SE sec. 21-21-36. Derrick.
Shell Pet. Corp. No. 2-H State, CWL NE NE sec. 13-21-35. T.D. 277 ft.; set 12½-in. csg.
Humble O. & R. Co. No. 11 State-Aggies, C NE NE sec. 31-20-37. Cellar.
Atlantic Ref. Co. No. 5 State L, C NW NW sec. 3-21-36. Loc.
Two States et al No. 1 State, C SE NW sec. 11-21-36. T.D. 230 ft.; set 10¾-in. csg.
Gulf Oil Corp. No. 2 White, C NE SE sec. 25-20-36. M.I.M.

Sims Area

Skelly Oil Co. No. 1 R. R. Simms C, C SE SW sec. 3-23-37. Drlg. 3,340 ft.
Penrose & Rowan No. 3 Cary, C SE NW sec. 22-23-37. T.D. 1,150 ft.; S.D.O.
W. H. Street et al No. 1 Wood, C W½ SE NE NE sec. 22-23-37. Drlg. 3,636 ft.
J. E. Farrell No. 1 Walden C, sec. 15-22-37. Drlg. 3,611 ft.
J. E. Farrell No. 1-A Walden, C SW NW sec. 15-22-37. Drlg. 3,551 ft.
Skelly Oil Co. No. 2 R. R. Simms, C NE SW sec. 3-23-37. Drlg. 3,393 ft.

Skelly Oil Co. No. 2 Ella Simms, C SW NE sec. 3-23-37. T.D. 3,405 ft.; set 7-in. csg.
Skelly Oil Co. No. 4 Baker, C SW NW sec. 27-22-37. Spudded.

Cooper Area

Southern Oil Corp. No. 1 Gates, C SW NW sec. 23-24-26. T.D. 3,514 ft.; S.D. for orders.
Shell Pet. Corp. No. 1 Guthrie, C SW SE sec. 34-23-36. T.D. 3,928 ft.; P.B. 3,780 ft.; S.D. for orders.
El Paso Natural Gas Co. No. 1 G. W. Toby, C SE SE sec. 12-24-36. Drlg. 3,685 ft.
Continental Oil Co. No. 1 Danciger, C NW NE sec. 8-22-36. Cellar and pits.

Lea County—Miscellaneous

Plains Prod. Co. No. 4 Knight, C SW SW sec. 22-24-37. Drlg. 2,315 ft.
Culberson-Irwin & Stovall No. 2 Stuart, NW SE NE sec. 20-25-7. T.D. 3,277 ft.; P.B. 3,175 ft.; drlg. by whipstock.
Brown & Reynolds No. 1 Parcell, C NW SE sec. 8-21-38. Wildcat; T.D. 4,373 ft.; running csg.
Tide Water Oil Co. No. 1 Coates B, C NW NW sec. 21-25-37. T.D. 3,077 ft.; P.B. 3,032 ft.; C.O.
Amon G. Carter No. 2 Elliott, C NE NW sec. 22-22-37. T.D. 3,622 ft.; fishing.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 24-17-34. T.D. 4,813 ft.; testing.
Empire O. & R. Co. & Repollo Oil Co. No. 1 Brunson, NW NW SE sec. 4-22-37. T.D. 3,750 ft.; acidized.
Anderson-Prichard Oil Corp. No. 2 Carlson, C SW NW sec. 21-25-37. T.D. 2,925 ft.; flowed 60 B.O. per day.
Getty Oil Co. No. 1 Etz, C NE NE sec. 12-21-32. Wildcat; drlg. 3,337 ft.
Culberson-Irwin & Stovall No. 3 Stuart, NE SE SW sec. 10-25-37. Cellar and pits.
Continental Oil Co. No. 1 Wantz, C SW SW sec. 21-21-37. T.D. 3,815 ft.; testing.
Maljamar Oil & Gas Co. No. 8 Baish, C SW NW sec. 21-17-32. Drlg. 1,450 ft.
Mid-Continent Pet. Corp. No. 1 Greer, sec. 21-22-36. T.D. 3,794 ft.; testing.
Ohio Oil Co. No. 5 State-McDonald, sec. 16-22-36. Drlg. 3,906 ft.
Stanolind O. & G. Co. No. 1 Meyers, sec. 22-24-37. Drlg. 3,372 ft.
Texas Co. No. 1 Alexander, sec. 5-21-37. Drlg. 2,625 ft.
El Paso Natural Gas Co. No. 2 Harrison, C NW NW sec. 29-24-37. T.D. 3,631 ft.; drill stem test.
El Paso Natural Gas Co. No. 1 Harrison, C NW NW sec. 7-25-37. T.D. 3,558 ft.; set 7-in. csg.
Sun Oil Co. No. 2 Stewart, C SW NE sec. 15-25-37. Loc.
Tide Water Oil Co. No. 2 Walden, C SW NE sec. 21-22-37. Drlg. 2,250 ft.
Continental Oil Co. No. 1 Skaggs Permit, C NE SE sec. 24-20-37. Wildcat; drlg. 540 ft.
Tide Water Associated Oil Co. No. 2 Walden, C SW NE sec. 21-22-37. Drlg. 1,320 ft.
Shell Pet. Corp. No. 2 Black, C SW SE sec. 21-24-37. Drlg. 1,560 ft.
Texas Co. No. 3 Sheppard B, SW NE NE sec. 5-26-37. T.D. 3,899 ft.; cleaning out.
J. L. Perry No. 1 Elliott, SE cor. sec. 19-21-37. Standardising.
Samedan Oil Co. No. 3 Hughes, sec. 4-23-37. T.D. 239 ft.; set 12½-in. csg.
Texas Co. No. 2 Black, sec. 21-24-37. Drlg. 190 ft.
Gulf Oil Corp. No. 1 Hardy, C SE SW sec. 20-21-37. Rig.
Mack & Stauffer No. 1 Grizzell, C NW NE sec. 8-22-37. Drlg. 535 ft.
Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-25-37. Cellar and pits.
Hershback et al No. 1 Alston, C SW NE sec. 31-17-37. Wildcat; Loc.
J. C. Clower No. 2 Turner, SW SW SE sec. 29-21-37. Rigging up machine.
Continental Oil Co. No. 4 McCallister A, C N½ NE SE sec. 24-26-36. Cellar and pits.
Williams & Cockburn No. 3 Miller, C SW SW sec. 23-17-32. Drlg. 3,470 ft.

Eddy County

Etz Bros. No. 3 State, sec. 16-17-30. T.D. 3,252 ft.; S.D. for csg.
McGinley & Harwell No. 7 Mann, SW cor. sec. 4-18-27. Drlg. 2,170 ft.
Clint Murchison et al No. 1 State A, C NE SW sec. 16-17-31. T.D. 3,644 ft.; to plug back.
Premier Pet. Co. No. 1 McIntyre G, NW NW NE sec. 21-17-30. T.D. 3,357 ft.; reacidized.
Flynn, Welch & Yates No. 75 State, C E½ SE SE sec. 10-19-28. T.D. 2,135 ft.; S.D.O.
Flynn, Welch & Yates No. 3 Gissler, SW SE SW sec. 14-17-30. Drlg. 3,495 ft.
Adams et al No. 1 Page, sec. 15-21-18. Wildcat; machine.
Republic Prod. Co. No. 7 Russell A, NW SE NW sec. 18-17-31. Drlg. 2,042 ft.
Red Lake Oil Co. No. 8 State, SE NW SW sec. 22-17-28. Drlg. 1,475 ft.
Republic Prod. Co. No. 3 Robinson Permit, C NE NE sec. 27-17-29. Drlg. 760 ft.
Neil H. Wills No. 1 Colglazier Permit, C NW NE sec. 20-20-30. T.D. 1,443 ft.; showing oil.
Barnsdall Oil Co. No. 5 Dodd, sec. 22-17-29. Drlg. 815 ft.
Flint Prod. Co. No. 1 Flint, sec. 14-17-30. T.D. 3,459 ft.; running tubing.
William Dooley No. 2 Hatchett, SW SW NE sec. 14-20-26. Location.

Roosevelt County

Clovis Corp. No. 2 Wilmes, C SE NE sec. 17-2s-30e. Drlg. 2,050 ft.
Wirt Franklin and Flynn, Welch & Yates No. 1 Catts, C NW NW sec. 28-3n-30e. Drlg. 4,495 ft.

Hobbs Field

Stanolind O. & G. Co. No. 30-X Capps, SE sec. 3-19-38. Drlg. 2,960 ft.

Otero County

George Muldey No. 1 State, SW cor. sec. 11-25-8e. Spudded.
O. K. Hearte No. 1 Hattie Evans, NW NW SW sec. 22-24-12. O.W.D.D.; wildcat; drlg. 1,840 ft.

NORTHWEST NEW MEXICO

San Juan County

Sanford B. Bashaw No. 2 Stallings, SW NW NW section 2-29n-16w, in the Meadows district, was tested at 1,154 feet and pumped 100 per cent water. It was abandoned.

COLORADO

Archuleta County

Dr. George H. Gillen, of Denver, and associates, have acquired the Lena M. Garnett permit com-

THREE MODERN PROBLEMS

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prising aproximately 600 acres in the Price district in Archuleta County under an agreement which provides for the drilling of one well to start by April 1 and the completion of the Oil City Petroleum Co. No. 1-A Garnett in the NE NW SW section 25-33n-2e. The deal was made with the Oil City Petroleum Co. and the Archuleta Oil & Gas Co. The acreage lies immediately to the north of the wells drilled by the William E. Hughes Estate. The No. 1-A Garnett lies to the southwest of the producing wells and is shut down in the Upper Dakotas at 1,515 feet. The Lena M. Garnett permit comprises the W half SW section 1; NE section 11; W half section 12; and Lots 1 and 2, section 13-33n-2e.

Adams County

Glenridge Oil Corp. No. 1 Hills, SE SE SE sec. 27-3s-64w. T.D. 4,267 ft.; landed 6½-in. on bottom and resumed drlg.; rng. tour.

Huerfano County

S. W. Pressey No. 1 Ojo, SW NE sec. 10-29s-69w. Drlg. 3,310 ft.

Kiowa County

Gulf Oil Corp. No. 1 Riser-Union Pacific, C SW NE sec. 1-17-50w. Drlg. L. 5,800 ft.

Las Animas County

Garcia Corp. No. 1 McClung, NE NW SE sec. 19-33s-61w. T.D. 1,816 ft. in Lykens; H.F.W.

Moffat County

The Mountain Fuel Supply Co. No. 1 Stewart, which extends the productive area of the Powder Wash structure three-fourths of a mile west, is bottomed at 3,113 feet after going through 26 feet of saturated sand in the Wasatch formation. Unofficial reports are that it flowed 30 bbls. an hour through the 10¾-inch casing cemented at 3,085 feet. This well and the same company's No. 1 Allen, NE SW SE section 32, which was completed at 5,032 feet last December for 47 bbls. per hour, have started a big leasing campaign to which more detail reference is made under the summary for Wyoming.

Anderson-Kerr Drlg. Co. et al No. 1 Govt., C SE SE sec. 19-9n-99w. Drlg. in br. sdy. sh. 585 ft.

Mountain Fuel Supply Co. No. 1 Stewart, C SW SW sec. 21-12n-97w. T.D. 3,113 ft.; prep. to test.

Morgan County

Swisher et al No. 1 Lunt, SE cor. sec. 3-4n-60w. Resumed; T.D. 1,718 ft.; rng. tbg. with packer to test.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75. Drlg. 3,825 ft.; est. 500,000 ft. gas at 3,818 ft.
South Park Oil Co. No. 1 State, SE NE SW sec. 16-11s-75w. T.D. 5,705 ft.; rep. rig.

WYOMING

Albany County

The Murphy Oil Co. No. 5 Holst, SE NE SE section 13-17n-77w, Quealy dome, a north offset to No. 1 Holst, the discovery well, was completed in the Dakota for 9 bbls. an hour after plugging back from the Sundance at 3,764 feet, total depth. The top of the Dakota was at 3,212 feet. While the Sundance showed saturation, it was plugged off temporarily and will go back into that horizon later.

Murphy Oil Co. No. 6 Holst, NW NE SE sec. 13-17n-77. Drlg. 3,346 ft.

Big Horn County

Contracts have been signed whereby the Paintrock structure in Big Horn County will be tested this summer to the Madison lime. The Wood-Callahan Oil Co., Ltd., of California, has acquired a one-half interest in the operation from the Wyoming Oil & Refining Co., and is expected to begin drilling by May 1. A rotary probably will be moved in. The location probably will be the same as the Wyoming Oil & Refining Co. No. 1 Evans, NE NE NW section 12-49n-91w, which spudded and set the 12½-inch two years ago. The structure was first mapped in reconnaisance in 1915 by the U. S. Geological Survey and was later detailed by Roy Holloman, consulting geologist, of Denver. Paintrock is a northwest-southeast trending anticline about 9 miles long by 1½ to 2 miles wide, with a closure of 1,500 feet. The oldest surface formation exposed at the surface is the Sundance. The Madison is expected at about 3,100 feet.

Ohio Oil Co. No. 1 Baker-Byron, SE NW sec. 23-56n-97w. Drlg. 1,199 ft.
Ohio Oil Co. No. 1 State, NE cor. Lot 38, sec. 36-46n-97. T.D. 5,396 ft.; cmtd. 7-in. on top Embar at 5,331 ft.; W.O.C.

Carbon County

S. Marvin James, of Denver, and associates, have signed a contract for a rotary test to 5,000 feet in the Baggs area, in southern Carbon County. Location has not yet been released, but is west of the two gas wells on the Baggs structure drilled several years ago by the Red Feather Oil Co., in which James has an interest, and between the Baggs dome and the Powder Wash dome in Moffat County, Colorado.

Ohio Oil Co.-California Co. No. 2 Kyle, C SE SE sec. 26-21n-79w. Drlg. sh. 1,230 ft.
Ohio Oil Co.-California Co. No. 4 Union Pacific, C SW SW sec. 25-21n-79w. Ready to spud.
Ohio Oil Co. No. 1 H.&C., SE SE SW sec. 35-20n-78w. Drlg. 3,202 ft.; top Sundance 3,093 ft.
Ohio Oil Co. No. 7 H.&C., C NW sec. 2-19-78. Drlg. 5,484 ft.
General Pet. Corp. No. 1 Union Pacific, SW NW sec. 19-83w. P.B. from 5,557 ft. and set 8⅝-in. at 2,875 ft.; hole bridged below pipe.

Fremont County

Tropic Oil Co. No. 1 Govt., C SE SW sec. 34-27n-90w. S.D. 3,160 ft.

Goshen County

Ohio Oil Co. No. 1 Red Cloud Cattle Co., NW NE NW sec. 28-20n-62w. Drlg. 2,100 ft.; top r.b. 1,690 ft.

Laramie County

Amerada Pet. Corp. No. 1 Morton, C SW SW sec. 13-13n-68. Drlg. 8,888 ft. in sdy. L.; probably in Morrison.

Lincoln County

Place Oil Co. No. 1 Davis, SE SE SE sec. 9-26n-113w. S.D. 750 ft.

Natrona County

The Mutual Oil Syndicate (S. H. Keoughan and others) are equipping its Nos. 2 and 3 wells on the Midway dome with electrical pumping installation preliminary to putting them on production. They were drilled several years ago, but have never been regularly produced. No. 1 Boyer, C NE NE section 23-35n-79w, the discovery well, which was completed at 5,190 feet in 1930, had produced 160,000 bbls. of oil up to January 1, 1937.

Niobrara County

The Ohio Oil Co. has a nice completion in Lance Creek in its No. 9 Elizabeth Lamb, C SE NE section 5-35n-65w, an inside well, which flowed 56 bbls. the first 30 minutes through the casing at a total depth of 4,072 feet. It was prorated at 347

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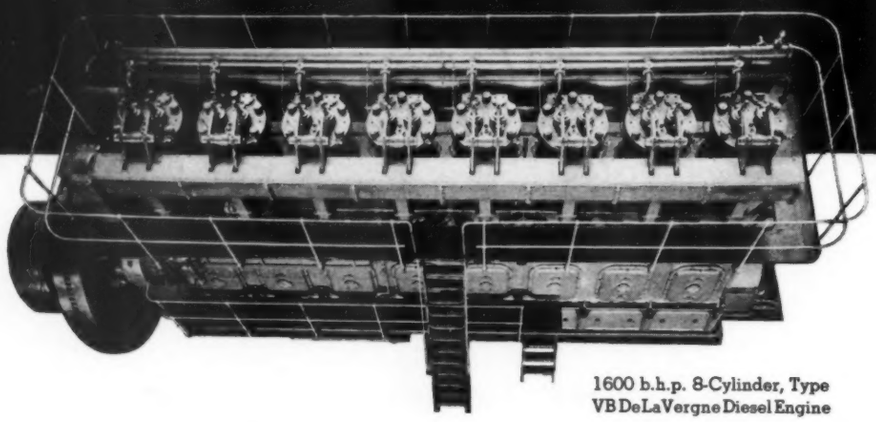

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bbls. per day. Top of the basal Sundance was at 4,046 feet.

The J. M. Huber Corp. No. 2 Joss, NE NE SW section 6-35n-65w, an outside well on the west side, which was completed several weeks ago at 3,982 feet, pumped 150 bbls. initially from the basal Sundance topped at 3,973 feet.

Continental Oil Co. No. 3-B Schuricht, C SE SE sec. 6-35n-65w. Bldg. rig.
J. M. Huber Corp. No. 1 Midwest, SE SE SW sec. 27-36n-65w. Dismantling old equipment and prep. to install rotary to deepen from 3,540 ft. to Sundance.
Holly Dev. Co. No. 1 Novick, NE SE SW sec. 6-35n-65. T.D. 3,578 ft.; has hold on D.P. and coming out.
Ohio Oil Co. No. 7 Putnam, NE NE SW sec. 33-36n-65w. T.D. 3,501 ft.; rebldg. rig blown down.
Ohio Oil Co. No. 5 Leo, NW NW SW sec. 35-36n-65w. Drlg. 660 ft.

Park County

General Pet. Corp. No. 1 Govt., NW NW NW sec. 33-47-100. T.D. 5,660 ft.; fsg.

Platte County

Dividend O. & R. Co., Inc., No. 1, CSL NW SW sec. 17-24n-66. S.D. 2,385 ft.; C.D.

Washakie County

Two completions were reported in the Hidden Dome pool. Nystrom & Smoot No. 4 State, CEL NE NE section 36-48n-91w, had an initial production of 2 bbls. per day in the Frontier at 1,581-1,607 feet and probably will be abandoned.

The Wood-Callahan Oil Co., Ltd., No. 1 Keye, NE NE NW section 25-48-91, was plugged and abandoned at 1,910 feet. It had 600 feet of water.

Christensen & Thorne No. 3-X Govt., NW SW SW sec. 31-48n-90w. Drlg. 800 ft.

MONTANA

Carbon County

Miracle Oil Co. No. 2 Govt., CWL NE SE sec. 3-6s-23e. T.D. 1,260 ft.; landed 8¼-in. at 1,250 ft.; fsg.

Fallon County

Montana-Dakota Utilities No. 2 Warren No. 1 Unit 3, C SW sec. 28-8n-59e. T.D. 7,360 (C.D.) ft.; will P.B.
Montana-Dakota Utilities Co. No. 3 Smith No. 1, Unit 8, C SE NW sec. 8-4n-62e. T.D. 6,765 ft.; 9⅝-in. cmtd. at 6,750 ft.; W.O.C.
Nagasco Corp., Inc., No. 1, C SE sec. 24-5n-60e. Drlg. 560 ft.; (first report).

Petroleum County

O. B. Canfield No. 1 Govt., CEL SE NE sec. 21-17n-24e. (black Butte); drlg. 750 ft.

Park County

Ben W. Ryan et al No. 1 Burgess, SE SW NW sec. 28-2s-11e. S.D. 610 ft.

Phillips County

R. G. Parrent No. 1 Hartman, C NW SE sec. 12-24n-25e. S.D. 862 ft.

Toole County

All drilling wells in the Kevin-Sunburst field continued shut down on account of the weather.

UTAH

Grand County

A wildcat which will warrant careful watching the next few weeks is the Columbia Crude Corp. No. 1 Rath, NW SW SE section 12-25s-20e, in the Seven-Mile district, 10 miles northwest of Moab and to the north of the chain of Colorado River structures which attracted attention 10 years ago. The Rath well is bottomed at 2,138 feet in the Paradox formation, topped at 1,865 feet. It had a show of oil in a hard tight sand at 2,085-2,134 feet, followed by a hard limestone at 2,134-35 feet. The bit then dropped into a soft porous saturated sand at 2,135-38 feet. Before drilling into the sand the 7-inch was run to 2,033 feet for a formation shutoff, there being 1,700 feet of water in the hole. The cement failed to hold and the pipe was pulled. A wooden plug was driven into the top of the sand and the pipe rerun and lowered 10 feet. It was then found that bottom-hole pressure had forced the wooden plug 30 feet up the hole. After several attempts to complete the formation shutoff wihout success, it is believed that the plug will now hold until the pipe can be securely cemented and a test made.

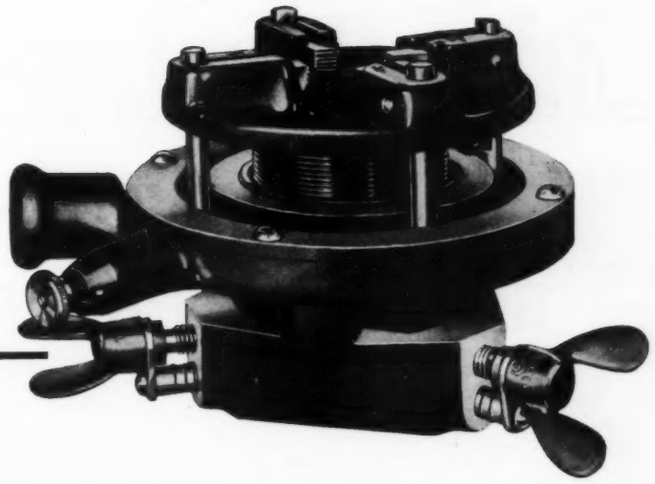
Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-32e. T.D. 6,363 ft. in upper Hermosa; prep. to resume March 1.
Columbia Crude Corp. No. 1 Rath, NW SW SW sec. 12-25-20e. T.D. 2,138 ft.; hd. fine, light sd. 2,085-2,134 ft.; porous sat. sd. 2,135-38 ft.; trying to S.O. 1,700 ft.; wtr. at 2,033 ft.

NEBRASKA

Another of the Nebraska wildcats shut down indefinitely this week in the Stephens Oil Corp. No. 1 Palmer, C NW SW section 1-33n-50w, Dakota Junction district, Dawes County. Total depth is 1,794 feet. It had the top of the Greenhorn lime at 1,425 feet.

Lincoln County

Smith & Wright No. 1 Hansen, C SW NW sec. 24-15n-31w. S.D. 800 ft.



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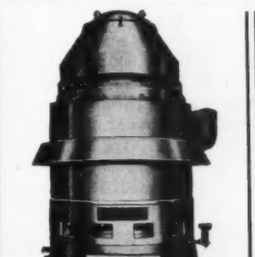

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CONSERVATION MEASURES IN RODESSA PROVE SUCCESSFUL

By MITCHELL TUCKER

SHREVEPORT, La., Feb. 22.—The staking of new locations in the Jefferson, Lodi, Lisbon, Texarkana, North Rodessa, Sligo, Cotton Valley and Converse fields points to a very busy campaign throughout the tristate area during the spring months. Center of attention continues upon the Jefferson-Lodi development in Marion County, Texas, southwest of the present Rodessa field.

Rodessa Conservation

Studies made by the engineering subcommittee of the Rodessa operators committee are conclusively proving the great conservation which was effected by the recent Rodessa order reallocating production upon a 50 per cent acreage and bottom hole pressure basis, with the restriction of a gas limit factor of 2,000 feet to 1 bbl. of oil. This committee recently made the following published statement regarding the Louisiana side of the Rodessa field.

"A check and estimation of the gas being produced with the oil totals 83,112,000 feet per day. This is an average of 297,900 feet of gas per day per well. For a production of 50,000 bbls. daily (February allowable) the average gas-oil ratio is 1,662 feet per barrel. Of the 83,112,000 feet of gas per day with the oil, about 37,490,000 feet, or 45 per cent, is put into pipe lines along with the gas well output. This casinghead gas comes from 113 oil wells, or 40.5 per cent of the total oil wells. The estimated amount of gas from oil wells not put into pipe lines is 46,000,000 feet per day. A considerable amount of this gas is used in lease operation and shrinkage or through gasoline plants. It is estimated that at present about 30,000,000 feet is being blown to the air. Five months ago the gas to air was at least 600,000,000 feet per day."

Further in this regard, the last periodical survey of 97 key wells on the Louisiana side showed a very satisfactory maintenance of reservoir pressure. For the period January 1 to February 1 the weighted average pressure suffered a 12-pound drop, or a drop per day of .39 pound. This represents a great improvement over recorded drops from previous surveys, as indicated from following tabulation:

Date of survey—	Pressure	Lbs., loss	Days	Daily loss in B.P.H. lbs.
July 7, 1936	2,314	...	..	...
Aug. 27, 1936	2,162	152	51	2.98
Sept. 27, 1936	2,080	82	31	2.64
Oct. 27, 1936	2,009	71	30	2.37
Nov. 27, 1936	1,950	59	31	1.90
Jan. 1, 1937	1,886	64	35	1.83
Feb. 1, 1937	1,874	12	31	.39

Survey of bottom-hole pressure key wells is now being completed on Texas side of the field, and a corresponding improvement is expected there.

At the present time 87 of the 348 wells on Louisiana side of the field are classified as gas wells, and 33 of them are shut down either because they do not have a market for the gas, or because the commission has temporarily shut them down until they are reconditioned so that only one of the multiple producing formations is exposed to the open hole.

J. Edward Jones 1-B Sharp, NE section 4-23-16, in what is becoming known as the "North Rodessa area," drilled the massive anhydrite 5,448-5,702 feet, and oil sand from 5,980-94 feet, indicating 14 feet of heavy oil saturation. Casing was set at 5,965 feet preparatory to testing. The same operator's discovery extension well here is still producing about 200 bbls. daily from only 8 feet of saturation. The completion of the 1-B Sharp well as a good producer will do much to excite additional development north of Rodessa proper.

Ten miles northeast of the eastern edge of the Rodessa field, a 5,000-acre block has been assembled by Carl B. King and others of Dallas, and intentions are to drill a 6,000-foot Lower Glen Rose test in section 36-19-26, LaFayette County, Arkansas before April 1.

Estimated Daily Production

Estimated daily gross production in the week ending February 20 was as follows:

NORTH LOUISIANA

	Bbls.
Bellevue	770
Caddo light	3,885
Caddo heavy	2,500
Converse	865
Cotton Valley heavy	270
Cotton Valley light	530
De Soto and Red River	1,395
Elm Grove	345
Haynesville	3,460
Holly	145
Homer	2,590
Pleasant Hill	135
Rodessa	49,325
Sarepta-Carterville	345
Sligo	290
Urania	2,740
Zwolle	810
Total	70,400

SOUTH ARKANSAS

Champagnolle	1,975
El Dorado	2,015
Lisbon	275
Miller County	550
Nevada	725
Smackover light	2,075
Smackover heavy	17,490
Stephens	600
Troy	110
Urbana	1,555
Total	27,370

Texas side of Rodessa field—38,200 bbls. daily.

Marion County

Arkansas-Louisiana Gas Co. No. 1 W. S. Ford, Chas. Grayson Survey, midway between southwest production at Rodessa and the newly discovered Jefferson field, situated upon the Lodi structure, is coring through all possible pay horizons in the Lower Glen Rose before testing. This is the most closely watched test in the area, and promises to open a wide territory for development. The crew is coring below 6,265 feet and no definite announcements have been made as to the findings. It is reported that oil saturation was logged from 6,100-20 feet in the Gloyd section.

Holcomb, Thomason, Flesh and Hootkins No. 1 Lizzie Henderson, Bennington Survey, discovery well 3 miles north of Jefferson, continued to flow by heads at the rate of about 150 bbls. daily. It was decided to go in, kill the well, and perforate opposite the highly saturated gas sand logged just above the oil saturation in an effort to increase the well's flow. The 7-inch was perforated with 38 shots from 5,974-84 feet and washed hole with 245 bbls. of oil. After swabbing a short time well began flowing oil and continued for nine hours when well went dead. After swabbing again the well blew in as a very large gasser, estimated from 75,000,000 to 100,000,000 feet. It is now shut in awaiting orders. It is planned to either place a squeeze job on the gas sand through pipe perforations, or allow the well to remain as a gasser temporarily in order to supply fuel for locations being staked nearby. Total depth is 6,026 feet, plugged back from 6,405 feet.

Rodessa Completions—Louisiana

Magnolia Petroleum No. 12-A Caddo Levy Board, NE of section 21-23-16, flowed 22 bbls. hourly through three-sixteenths inch tubing choke, total depth 5,980 feet.

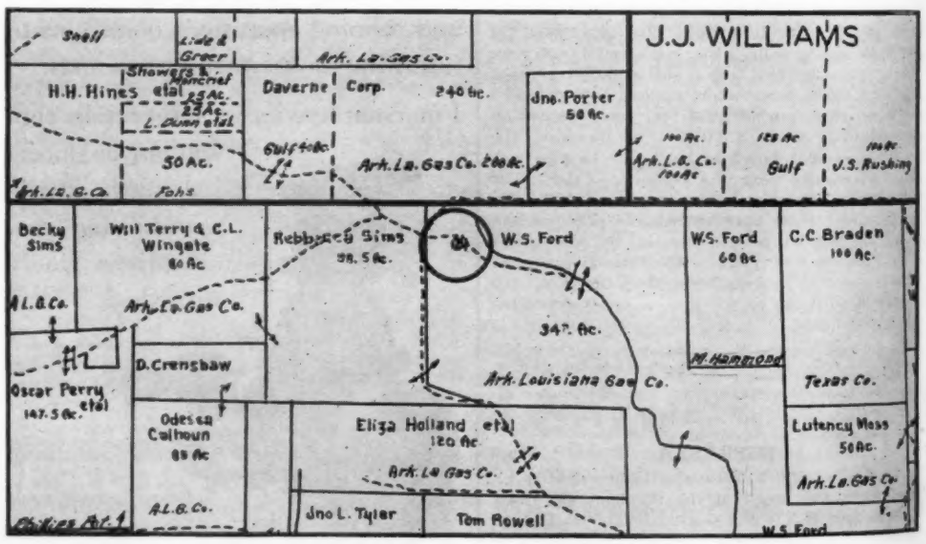
United Gas No. 1 Stephens, NE section 20-23-16, flowed 22 bbls. hourly through one-fourth inch tubing choke, total depth 5,915 feet, plugged back 6,018 feet.

Rodessa Completions—Texas

W. D. Ambrose No. 1 W. D. Chew (Phillips Petroleum Co. farmed out) Robert Trammel Survey, flowed 264 bbls. in 24 hours through one-fourth inch tubing choke, total depth 6,015 feet.

W. D. Ambrose No. 2 W. D. Chew, Robert Trammel Survey, flowed 204 bbls. daily through one-fourth inch tubing choke, total depth 6,014 feet.

Magnolia Petroleum No. 2 Allday Estate, P. Evans Survey, flowed 399 bbls. daily through one-



Arkansas-Louisiana Gas Co. No. 1 W. S. Ford, Charles Grayson Survey, Marion County, Texas, on the Lodi structure, midway between production at Rodessa and the newly discovered Jefferson field, and which promises to open a wide territory for development soon.—(Globe Map Co., Shreveport)

fourth inch tubing choke, total depth 5,907 feet.

United Production Co. No. 4 J. A. Bewley, H. Holbert Survey, flowed 17 bbls. hourly through one-fourth inch tubing choke, total depth 6,000 feet.

United Production Co. No. 1-A J. H. Bewley, H. Holbert Survey, flowed 22 bbls. hourly through three-eighths inch tubing choke, total depth 6,000 feet.

United Production Co. No. 1 G. W. Bibby Unit, Alex Archer Survey, flowed 30 bbls. hourly through three-eighths inch tubing choke, total depth 6,115 feet.

Vaughn Production Co. No. 2 Willis, SFIW Survey No. 1,263, flowed 72 bbls. hourly through one-fourth inch tubing choke, total depth 5,965 feet.

Bienville Parish

Lide & Greer No. 1 Smelley, SE SW NE section 13-16-5, exploratory test of deep horizons in the Bienville-Lincoln gas area, topped the Travis Peak at 7,139 feet and is being closely watched for saturated sands in this Lower Trinity member as it cores below 7,150 feet.

Bossier Parish

Arkansas-Louisiana Gas Co. No. 1 W. H. Davis, designed as an oil test on the northeastern flank of the Sligo gas field, found only gas and some salt water after drilling and testing to a total depth of 5,222 feet. The hole was plugged back with 50 sacks, casing perforated 5,130-40 feet and tested dry. It was then plugged back to 4,420 feet and perforated at 4,365-79 feet opposite the Lower Glen Rose, and tested dry. Drilled out to 4,450 feet and perforated 4,415-45 feet it tested 100,000 feet of gas. After acidizing with 2,000 gallons the volume increased to 10,000,000 feet. At the present depth of 4,450 feet preparations are being made to reacidize.

Triangle Drilling Co. No. 1-I Skallan, NE section 22-17-12, after finding only gas in the Pettitt sand, which was productive of oil one location south, was plugged back to 5,150 feet and flowed 15,000,000 feet of gas, with a light spray of oil, through perforations 5,143-48 feet. The well has been killed while preparations are being made to drill deeper.

Claiborne Parish

There is one producing well in the newly discovered Lisbon field and five rigging up or drilling. Definite indications of this field's future possibilities will be indicated following the completion of these wells. It is reported that Gulf Refining Co. is planning to lay an oil line into the field soon to connect to its Arkansas-Dubberly line and provide Lisbon with a ready outlet for its oil.

The Sugar Creek gas field received a half-mile northward extension of its Travis Peak producing limits by the completion of United Gas and others No. 1 Simms, NW section 32-20-5w, which gauged 12,000,000 feet of gas through one-half inch casing choke; 2,275 pounds rock pressure; total depth 5,690, plugged back from 5,714 feet.

Franklin Parish

The Arkansas Fuel Oil Co. is core-drilling the Sherrouse and Snyder 50,000-acre block of leases in Townships 12 and 13, Ranges 8 and 9e. It is reported that if the structure as indicated by these tests is favorable, a 6,000-foot test will be made on the block. Recently a 3,000-foot test was abandoned here.

LaSalle Parish

The Lee Oil Corp. of New Orleans has begun a drilling campaign on its extensive lease holdings in the Urania area, where it is planned to immediately drill ten 1,600-foot wells and eventually drill 40 wells in the field. Their company's No. 1 Tulloss, SW NE NE section 26-10-1e, is now rigging up.

The Placid Oil Co. is drilling at 600 feet in No. 3 Louisiana Central Lumber Co. NE SE of section 8-10-4e, for the third test of its 63,000-acre tract leased from the lumber company named. The first two wells were nonproductive.

Sabine Parish

A new producing area or field appeared possible when Earl F. Fox cored saturated gas sand with small showings of oil in his No. 1 Blankenship, NE SE NW section 13-9-12, from 3,233-37 feet in Washita formation. This test is located 4 miles southeast of the old Pleasant Hill field. It is checking

(Continued on Page 224)

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Kansas Developments

By
DAL DALRYMPLE

LARGE PRODUCERS IN TRAPP, BLOOMER, HAUSCHILD FIELDS

Several large producers were completed in the Trapp, Bloomer and Hauschild pools; gusher production was found in a shallow zone in the Gorham area; the Graber pool was extended westward, and a Cowley County wildcat was looking like a probable pool opener. These were highlights of an otherwise quiet week in the Kansas oil fields.

A. H. Witt No. 3 Witt, NW NE SE section 3-14-15w, on the operator's own farm in the Gorham area, Russell County, apparently has found gusher production in the shallow Tarkio lime zone at 2,562-65 feet. It began flowing unexpectedly, oil going over the top of the rig. It flowed and swabbed 188 bbls. of oil in the first hour.

Continental Oil Co. and others No. 1 Kinblade, NE SE SW section 20-21-1w, extended production one location west in the Graber pool, McPherson County. It topped Hunton lime at 3,287 feet and first oil was at 3,309 feet. It had not been tested.

Earl Wakefield and others No. 1 Napp, SW SW NW section 2-34-3e, wildcat 2 miles northwest of Vinton, Cowley County, topped Chat at 3,105 feet and at 3,142 feet it produced 12 bbls. of oil in 15 hours. It was thought it would open a small pool. It had dry Bartlesville sand at 3,042-60 feet.

An extensive leasing campaign has been under way in southwestern Kansas in the last three months. More than 400,000 acres of land in Stevens, Seward, Grant and Haskell counties, as well as in Texas County, Oklahoma, have recently been leased, it is reported. The heavy leasing campaign precedes the proposed extension of pipe lines into the Hugoton gas area.

The recommended allowable production in Kansas for March was set at 178,000 bbls. by the Bureau of Mines, an increase of 8,000 bbls. over the bureau's recommendation for February. This, however, is 9,918 bbls. under the allowable set by the Kansas Corporation Commission for February, which was 187,918 bbls. Although total production has never attained that allowable, another peak production record was set the past week when the daily average yield was 186,250 bbls.

Rice County

Four new oil wells in the Hauschild-Saxman area and three new wells in the Silica field, Rice County, were completed the past week.

Largest of the new producers was Carey and others No. 1 Strange, NW SW NW section 16-21-7w, Hauschild. It topped Conglomerate at 3,371 feet; had pay at 3,377-78 feet, total depth; flowed 311 bbls. of oil in six hours and made potential of 1,179 bbls. of oil. It was retested, flowed 563 bbls. of oil in six hours and made new potential of 2,134 bbls.

Derby Oil Co. No. 1 Theede, NE NW NW section 14-21-7w, Hauschild-Saxman area, flowed 378 bbls. of oil in six hours and made potential of 1,433 bbls. from Conglomerate at 3,369 feet; total depth, 3,393 feet. Grace Oil Co. No. 1 Goosman, SE SE NE section 8-21-7w, topped Conglomerate at 3,366 feet; total deptd, 3,378 feet, where water intruded; plugged back to 3,375 feet; flowed 349 bbls. of oil in six hours and made potential of 1,323 bbls. Atlantic Refining Co. and others No. 1 Patton A, NE NW NE section 7-21-7w, topped Conglomerate at 3,327 feet; total depth, 3,334 feet; flowed 220 bbls. of oil in six hours and made potential of 834 bbls. of oil.

Darby Petroleum Co. No. 1 Johnson, SE SE SW section 10-21-7w, an old Hauschild well, increased potential from 2,160 bbls. to 6,833 bbls. by deepening from 3,367 feet to 3,381 feet, and was recompleted. After deepening, it flowed 1,803 bbls. of oil in six hours.

In the Silica field, Gulf Oil Corp. No. 8 Stoltz, Jr., SE NW NW section 5-20-10w, topped Siliceous lime at 3,291 feet; was bottomed at 3,301 feet; acidized with 1,000 gallons and made potential of 1,452 bbls. of oil. It flowed 54 bbls. of oil in one hour before treatment. Same company's No. 7 Stoltz, NW SE NW section 32-19-10w, topped Siliceous lime at 3,278 feet; total depth, 3,286 feet; swabbed 142 bbls. of oil and 30 bbls. of water in 3 hours and 15 minutes; plugged back to 3,284 feet, and pumped 347 bbls. of oil and 164 bbls. of water in 12 hours; plugged back to 3,283 feet and made potential of 877 bbls. of oil, with 323 bbls. of water. Magnolia Petroleum Co. No. 4 Boyer, NE NW NW section 7-20-10w, swabbed 625 bbls. of oil in nine hours and made potential of 1,409 bbls. of oil after topping Siliceous lime at 3,287 feet, and stopping at 3,293 feet, total depth.

Shell Petroleum Corp. No. 1 Callis, NW NE SE section 16-19-9w, an old well in the Chase area, was deepened from 3,258 feet to 3,772 feet and recompleted as a water-disposal well.

Dickey Oil Co. No. 1 Brothers, SE cor. section 1-21-7w, wildcat, was dry and abandoned at 3,567 feet, total depth. It previously was reported as rigging up to deepen from old total depth, but this was not done.

First reports of new work in Rice County: Skelly Oil Co. No. 2 Dittmers, SW cor. section 28-19-10w, moving in material; Bradley Oil Co. No. 7 Mitchell, SE SE SW section 32-19-10w, moving in material; Gulf Oil Corp. No. 4 Wendell, SE NW SE section 32-19-10w, building rotary rig; same company's No. 5 Knop, SW NE NW section 33-19-10w, building rotary rig; Texas Co. No. 5 Kleile, SE SW SW section 34-19-10w, rigging up rotary; Magnolia Petroleum Co. No. 5 Bayer, SE NW NW section 7-20-10w, rotary rig; J. H. Tatlock No. 1 Amos Bayer, NW NE NW section 7-20-10w, cellar; Roy Ramsey and others No. 1 Malone, NW NW NE section 1-20-10w, building rig; Aylward and others No. 4 M. A. Johnson, SW NE NE section 17-21-7w, building rotary rig.

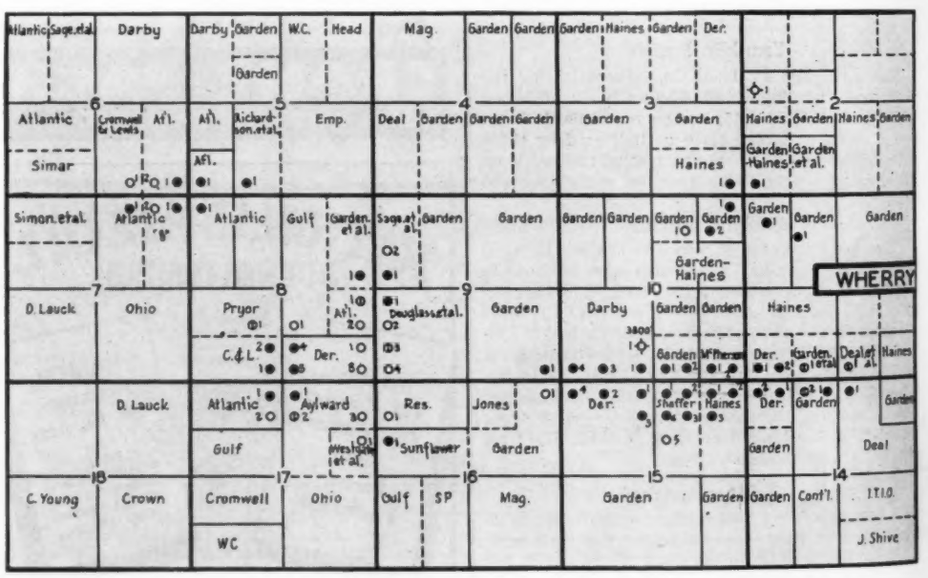
Russell County

Three large producers were added to the fast growing list of oil wells in the busy Trapp field, southern Russell County. Two new producers also were completed in the Gorham-Sullivan area and two failures were recorded for Russell County during the week.

W. I. Southern, Inc., No. 3 Michaelis, SE NE NW section 31-15-13w, Trapp pool, flowed 1,325 bbls. of oil in 12 hours after treating with 4,000 gallons of acid and made potential of 2,675 bbls. Top of Siliceous lime was 3,273 feet; total depth, 3,277 feet. Same operator's No. 5 Sellens Heirs A, NW SE SW section 30-15-13w, had Siliceous lime at 3,272-76 feet, total depth, acidized with 4,000 gallons and made potential of 2,589 bbls. of oil. Coralena Oil Co. No. 5 Boomhower, SE NE NW section 32-15-13w, was completed in Siliceous lime at 3,329-32 feet, total depth. After acidizing with 2,000 gallons, it made potential of 2,466 bbls. of oil.

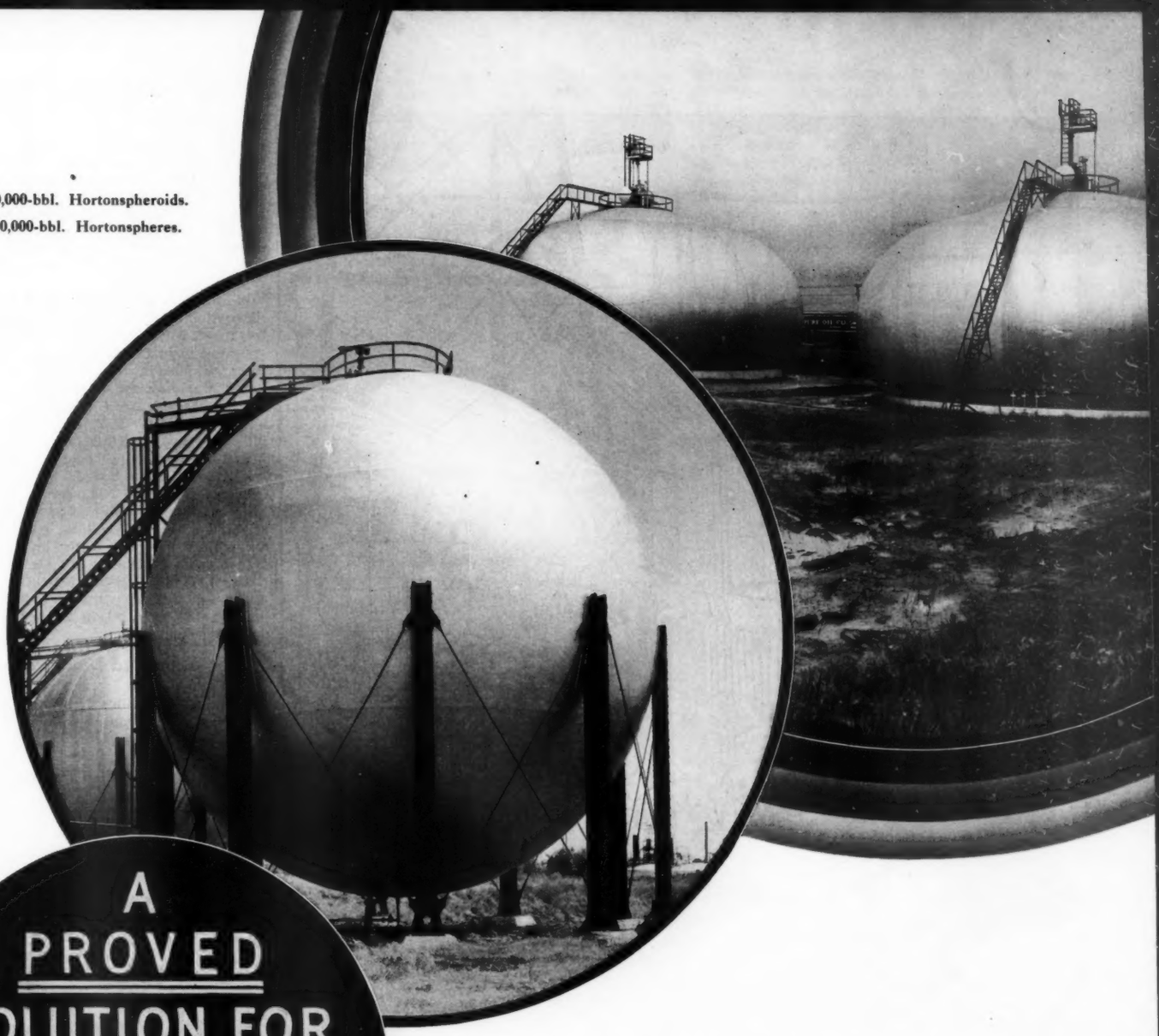
In the Gorham-Sullivan area, Texas Co. No. 1 Dumler, NW NW SE section 1-14-15w, topped Anhydrite at 913 feet; Topeka, 2,770 feet; Kansas City lime, the producing horizon, 3,046 feet; total depth, 3,110 feet. After treating with 1,000 gallons of acid it made potential of 848 bbls. of oil. Darby Petroleum Corp. No. 2 Dumler B, SW SW NW section 11-14-15w, made potential of 584 bbls. of oil from Gorham sand topped at 3,266 feet; total depth, 3,274 feet. It topped anhydrite at 891 feet; Kansas City, 3,025 feet. Paxton & Miller No. 1 Mills, NE NE NW section 10-14-15w, was dry and abandoned at 3,368 feet, total depth. It topped Kansas City lime at 3,039 feet; Conglomerate, 3,280 feet.

El Dorado Refining Co. No. 1 Scott, NW NW NE section 17-13-13w, wildcat, topped anhydrite at 823 feet; Dodge, 2,730 feet; Kansas City, 3,035 feet; had water at 3,145-50 feet; Conglomerate,



Realization of early predictions that the Hauschild and Saxman pools of Rice County, Kansas, eventually would be joined and become one large field appears imminent. This is one of the busiest oil areas in Kansas. (Mid-Continent Map Co., Wichita.)

Right: 40,000-bbl. Hortonspheroids.
Below: 10,000-bbl. Hortonspheres.



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3,317 feet; hole full of water, 3,360-67 feet; Simpson, 3,383 feet; Siliceous, 3,504 feet, and was dry and abandoned at 3,554 feet, total depth.

New work in Russell County: Empire Oil & Refining Co. No. 1 Hickey, SE cor. section 25-14-14w, Hall pool, location; Texas Co. No. 2 Dumler, NE NW SE section 1-14-15w, Gorham-Sullivan area, location; Gulf Oil Corp. No. 3 Ehrlich, NW SW NW section 1-14-15w, old well, rigging up to deepen; Shell Petroleum Corp. No. 3-A Michaelis, NW SW NE section 31-15-13w, Trapp pool, twin well, building rig.

Phillips Petroleum Co. No. 3 Hoffman, NE NW SE section 31-15-13w, topped Siliceous lime at 3,317 feet; set 7-inch casing at 3,319 feet; rigged up standard tools at 3,320 feet; was bottomed at 3,323 feet; swabbed at the rate of 25 bbls. of oil an hour; was acidized with 4,000 gallons, but had not been tested. W. I. Southern, Inc., No. 3 Boomhower, SW SW NW section 32-15-13w, topped Siliceous lime at 3,304 feet; had pay at 3,307-10 feet, total depth, and acidized with 4,000 gallons but had not been tested. Same operator's No. 1 Neidens, SW NW NE section 32-15-13w, topped Siliceous lime at 3,335 feet; total depth, 3,339 feet; acidized with 4,000 gallons, pumped 1,204 bbls. of oil, with 3 per cent water, in 12 hours but was not completed. Dickey Oil Co. and others No. 1 Krug, SW SE NE section 34-15-13w, was bottomed in Siliceous lime at 3,304-13 feet, and pumped 434 bbls. oil in 24 hours, naturally, but was not completed.

Estimated Daily Production

Estimated daily average production of Kansas for the week ending February 20, and for the preceding week, was as follows:

	Barrels	
	Feb. 20	Feb. 13
Oxford City	2,700	2,725
Burrton	15,950	16,050
Ritz-Canton	5,650	5,700
Graber	2,825	2,725
Hollow-Nikkel	3,600	3,625
Voshell	3,050	3,050
Wellington	2,750	.....
Ellsworth County:		
Lorraine-South Lorraine	6,000	5,175
Other pools	1,355	1,265
Rice-Barton Counties:		
Bloomer	2,850	2,125
Chase	8,925	9,275
Geneseo	3,375	2,725
Raymond	2,900	2,725
Silica	17,325	17,050
Keesling	2,100	2,050
Hauschild	2,825	2,475
Miscellaneous Rice	6,440	5,665
Miscellaneous Barton	5,430	4,925
Russell County:		
Fairport	2,385	2,370
Gorham-East Gorham	5,820	5,505
Russell	2,910	2,580
Sullivan	2,480	1,770
Trapp	5,855	4,270
Miscellaneous Russell	5,900	4,905
Sedgwick County:		
Valley Center	1,340	1,325
Greenwich	1,320	1,335
Miscellaneous Sedgwick	1,980	1,205
Ellis County:		
Bemis	3,900	.....
Miscellaneous Ellis	1,510	5,135
Kingman County	790	660
Stafford County	2,630	2,435
Greenwood	9,500	9,500
Butler County	17,900	17,850
Other fields	22,980	23,995
Total Kansas	186,250	175,975

Harvey County

Shell Petroleum Corp. No. 4 Neufeldt, SE SE NW section 6-22-3w, Hollow-Nikkel field, northwestern Harvey County, pumped 254 bbls. of oil in nine hours after acidizing with 1,000 gallons, made potential of 488 bbls. and was completed at 3,534 feet, total depth. Top of Chat was 3,159 feet; Misener sand, 3,486 feet; Hunton lime, producing formation, 3,497 feet.

Tom Palmer and others No. 1 Warkentine B. C W half NW SW section 1-23-2w, Warkentine pool, topped Siliceous lime at 3,496 feet; had a hole full of water at 3,513-27 feet, and was completed as a water-disposal well at 3,860 feet, total depth. It topped Chat at 2,967 feet; Hunton lime, 3,292 feet.

One new Harvey County operation was reported. E. J. Shaffer and others were moving in material at No. 1 Merwin, NE NE SE section 14-23-2w, Warkentine area.

Barton County

Two new wells were completed in the Bloomer field and one in the Beaver pool, Barton County. Skelly Oil Co. No. 7 Bloomer, SE SE NE section 36-17-11w, Bloomer area, topped Siliceous lime and set 6-inch casing at 3,236 feet, and was bottomed

at 3,242 feet. It made potential of 2,312 bbls. of oil, naturally, in 22½ hours; acidized with 1,000 gallons and increased potential to 2,840 bbls.

Texas Co. No. 5 Bloomer, SW NE NE section 36-17-11w, made potential of 2,500 bbls. of oil after acidizing with 1,000 gallons. It topped Siliceous lime and set 7-inch casing at 3,258 feet; total depth, 3,266 feet.

Darby Petroleum Corp. No. 5 Kultgen, NW cor. section 16-16-12w, Beaver pool, topped anhydrite at 796 feet; Kansas City lime, 3,054 feet; Conglomerate, the producing horizon, at 3,320 feet; total depth, 3,352 feet; and made potential of 149 bbls. of oil.

The only new operation reported in Barton County was Republic Natural Gas Co. No. 5 McLean, SE NE SE section 25-17-11w, rotary rig.

Reno County

Carlock and others No. 1 Brown Royalty Co., NW NW NE section 32-22-10w, wildcat in northwestern Reno County, east of the Richardson area of Stafford County, topped Kansas City lime at 3,258 feet; Conglomerate, 3,605 feet; Siliceous lime, 3,690 feet; cored at 3,693-3,705 feet, total depth, water intruded and it was dry and abandoned.

Olson Drilling Co. and Shell Petroleum Corp. No. 5 Duckworth, NE NW NE section 23-23-4w, an old well in the Burrton field, was deepened from 3,615 feet to 4,000 feet and recompleted as a water-disposal well.

New work in Reno County: Barnsdall Oil Co. No. 3 Westfall, SE NE SE section 19-24-4w, cellar; Olson Drilling Co. and others No. 1 Herriman, NW cor. section 22-24-8w, wildcat, building rotary rig; Magnolia Petroleum Co. No. 4 Harris, NE SW NW section 9-26-4w, building rotary rig; Shell Petroleum Corp. No. 5 Reese, SW cor. section 11-26-9w, location.

Texas Co. No. 8 Collins, SW NW NW section 16-24-4w, Burrton area, topped Chat at 3,280 feet, was bottomed at 3,360 feet; flowed 145 bbls. of oil and 10 per cent water in 24 hours after acidizing with 1,000 gallons; was reacidized with 3,000 gallons but had not been tested.

Ellsworth County

Carter Oil Co. and others No. 7 Ogden, SW NW SW section 26-17-9w, Lorraine field, Ellsworth County, topped Siliceous lime at 3,149 feet; had pay at 3,163-65 feet, total depth, and pumped 315 bbls. of oil in nine hours, making potential of 787 bbls. It was acidized with 1,000 gallons and made new potential of 1,339 bbls. of oil.

Continental Oil Co. and Empire Oil & Refining Co. No. 1 Rolfs, SW SW NE section 34-17-8w, Edwards pool, was acidized with 4,000 gallons and made potential of 1,107 bbls. of oil. It topped Siliceous lime at 3,243 feet; total depth, 3,256 feet.

Gulf Oil Corp. was building rig at No. 1 Grizzell, SW SW NW section 31-17-10w, in Ellsworth County, east of the Bloomer area in Barton County.

McPherson County

The only oil well completed in McPherson County was at Ohio Oil Co. No. 4 Whitright, SE SE SW section 30-19-1w, Ritz-Canton field. It topped Kansas City lime at 2,320 feet; Chat, producing horizon, 2,930 feet; total depth, 2,970 feet; acidized with 1,000 gallons and made potential of 220 bbls. of oil.

Reeves & Morine No. 1 Peterson, NW NW SE section 24-19-3w, was an abandoned location in the Chindberg area.

Two new wildcats in McPherson County were reported. Fred C. Frank and others No. 1 Doles, SE NW NE section 12-19-1w, east of Ritz-Canton, was rigging up. Bradley Brothers No. 1 Barnholt, SW SW SE section 30-20-5w, southwestern McPherson County and northeast of the Welch area, Rice County, was a location.

Hutchinson Oil & Gas Co. No. 1-A Lewis, NW SE SW section 26-19-2w, Ritz-Canton area, topped Chat at 2,923 feet, was bottomed at 2,970 feet, and had a hole full of oil.

Rush County

Morgan & Flynn No. 1 Moore, NW cor. section 25-18-16w, Otis field, Rush County, topped producing sand at 3,518 feet; total depth, 3,558 feet, and made potential of 108 bbls. of oil. Top of anhydrite was 940 feet.

New work in Rush County: Carter Oil Co. No. 1 Woodward, SE cor. section 23-18-16w, Otis area, cellar; same company's No. 1 Rubart, SE cor. section 24-18-16w, cellar; Schoenfeld & Kitch No. 1 Suppes, SW cor. section 14-16-16w, Winget area, moving in material.

Rooks County

El Dorado Refining Co. No. 1 Southard, SW SW SE section 1-6s-18w, Faubin pool, Rooks County, was officially completed after acidizing with 7,500 gallons and making potential of 492 bbls. of oil. It topped Kansas City lime at 3,045 feet; Simpson, 3,407 feet; Siliceous lime, 3,420 feet; total depth, 3,474 feet; plugged back to 3,080 feet and acidized. It is the second well in the pool, most northerly producing area in Kansas.

Sumner County

Lloyd, Frost & Study and others No. 1 fee, SE cor. section 31-34-1e, Sumner County wildcat, topped Mississippi formation at 3,678 feet; lime, 3,820 feet; lime, 3,919 feet; Simpson, 3,968-73 feet, total depth, water intruded and it was dry and abandoned.

Empire Oil & Refining Co. No. 1 Hoffman, NW NW SW section 27-34-1e, wildcat, topped Layton at 3,005 feet; lime, 3,705 feet; lime, 4,013 feet; Simpson, 4,077 feet; had a hole full of water at 4,086 feet and was dry and abandoned.

Dorrance and others No. 1 Caldwell, NE SE NE section 22-32-2e, Oxford area, topped Dolomite at 3,062 feet, had a hole full of water at 3,065 feet, total depth, and was dry and abandoned.

Cowley County

Roth & Faurot No. 7 Brant, SW SE NE section 12-32-4e, Cowley County, topped lime at 3,073 feet; Big lime, 3,470 feet; Siliceous lime, 3,516 feet; water intruded, and it was dry and abandoned at 3,526 feet, total depth.

Fountain & Piggott No. 1 Rush, NE NE SW

(Continued on Page 224)

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Oklahoma Operations

By DAL DALRYMPLE

EXPLORATION WORK SPREADS OVER LARGE OKLAHOMA AREA

The Oklahoma wildcat campaign continues to spread, new tests being announced for Beckham, Caddo, Harmon, Jefferson and Logan counties, with others proposed. Among the interesting proposed tests is one for Major County, northwestern Oklahoma.

The Jefferson County wildcat was announced by Heenan & Coe. It is No. 1 Rose, C SW SW section 1-5s-5w, southwest of the Healdton field of Carter County. It is to be a 5,000-foot test, but may be drilled deeper if production is not found at that depth. Location is on a 3,100-acre block, on a major trend on which several structures have been worked out between pools in Stephens County, Oklahoma, and Cooke County Texas.

Ed V. Parsons and others are considering a proposed test for the Isabella area, Major County. A large block has been assembled in Townships 20 and 21-11w.

A wildcat south of the Fitts field, Pontotoc County, was a center of attraction at the weekend. It is the E. H. Moore and others No. 1 Muse, SW NE SE section 33-2n-7e, in sight of the Fitts field but separated from it by a surface fault. It topped Hunton lime at 3,876 feet and had stains of oil in cores. The 9⅝-inch casing was being run. If a producer, it will be a new pool opener because of the physical separation from the Fitts field, and the resultant play may extend toward Jesse, to the southeast.

The March allowable production recommended for Oklahoma by the Bureau of Mines was set at 590,700 bbls., an increase of 8,800 bbls. over the February allowable. The market demand hearing is scheduled for February 25 at Oklahoma City.

Pontotoc County

Twelve new oil wells were completed in the Fitts field, Pontotoc County. Two old Fitts wells were plugged back and recompleted and two wells were completed elsewhere in Pontotoc County.

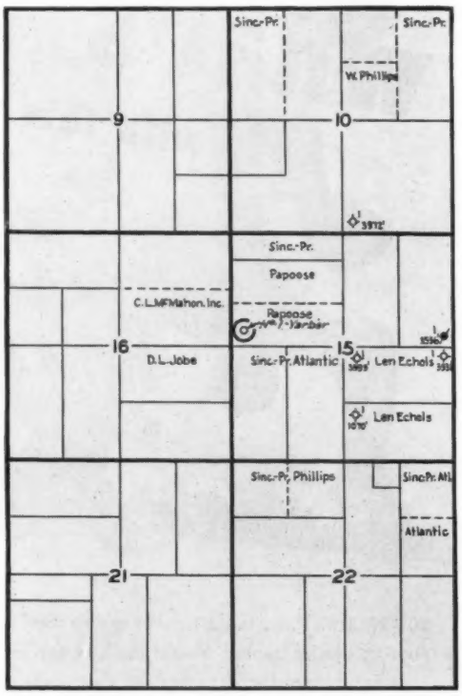
Mid-Continent Petroleum Corp. No. 5 McKoy, SE SW SW section 20-2n-7, topped Viola lime, the producing horizon, at 4,028 feet; total depth, 4,353 feet. It was acidized with 10,000 gallons, flowed 300 bbls. of oil through tubing in two hours and made potential of 1,059 bbls.

Amerada Petroleum Corp. No. 5 Woolley, NW SE SE section 21-2-7, topped Viola lime at 3,994 feet; Bromide, 4,265 feet, and was bottomed at 4,370 feet. After treating with 15,000 gallons of acid, it flowed 604 bbls. of oil in one hour and 30 minutes and made potential of 3,208 bbls.

Sinclair Prairie Oil Co. No. 13 Woolley A, SE NW SW section 22-2-7, was acidized with 10,000 gallons and flowed 464 bbls. of oil in two hours, making potential of 1,039 bbls. Top of Viola lime was 4,095 feet; Bromide, 4,340 feet; total depth, 4,370 feet. Magnolia Petroleum Co. No. 9 Norris, NE SW SE section 21-2-7, topped Hunton lime at 3,536 feet; Sylvan shale, 3,855 feet; total depth, 3,859 feet. It was treated with 10,000 gallons of acid, flowed 654 bbls. of oil gross in one hour and made potential of 4,136 bbls.

E. H. Moore and others No. 4 Burris, NW NW SE section 22-2-7, topped Hunton lime at 3,633 feet; total depth, 3,764 feet. It flowed 378 bbls. of oil in two hours and made potential of 3,000 bbls. Same operators' No. 1 Sadler, SW NW SE section 23-2-7, flowed 623 bbls. of oil in two hours and made potential of 4,535 bbls. Production was from Hunton lime topped at 3,624 feet; total depth, 3,735 feet. Skelly Oil Co. No. 6 Metropolitan Life, SE SE SW section 23-2-7, topped Viola lime at 4,012 feet; Bromide, 4,275 feet; total depth, 4,380 feet; plugged back to 4,250 feet; acidized with 5,000 and 8,000 gallons and made potential of 543 bbls. of oil.

Mabee Consolidated Corp. No. 1-A Smith, SW SW NW section 28-2-7, made potential of 1,229 bbls. after treating with 10,000 gallons of acid. Top of Hunton lime was 3,270 feet; Sylvan shale, 3,528 feet; total depth, 3,530 feet. Magnolia Petro-



A wildcat is to be drilled by Papoose Oil Co. in section 15-11-8e, southwest of the Dill pool of Okfuskee County, but across the line in Seminole County.—(Mid-Continent Map Co., Tulsa.)

leum Co. No. 16 Simpson, NE SE NE section 29-2-7, topped Hunton lime at 3,366 feet; Sylvan shale, 3,618 feet, and was bottomed at 3,629 feet. After treating with 10,000 gallons of acid, it flowed 432 bbls. of oil in one hour, gross, and made potential of 2,437 bbls.

Carter Oil Co. No. 11 Smith, NW NE SW section 28-2-7, was acidized with 10,000 gallons, and flowed 108 bbls. of oil net in seven hours. Potential rating was 598 bbls. It had Hunton lime at 3,210 feet; Sylvan shale, 3,459 feet; total depth, 3,464 feet. Same company's No. 23 Richards, NE NE SE section 30-2-7, had Hunton lime at 3,276 feet; Sylvan shale, 3,593 feet, and was bottomed at 3,597 feet. It was acidized with 8,000 and 4,000 gallons, flowed 125 bbls. of oil in one and one-half hours and died. It was completed as a 25-bbl. pumper. Loual Drilling Co. and Delaney No. 6-A Harden, SE NW NW section 30-2-7, was acidized with 10,000 gallons and made potential of 2,959 bbls. Top of Hunton lime was 3,525 feet; Sylvan, 3,800 feet; total depth, 3,802 feet.

Other Activity

E. H. Moore and others No. 2 Schauers, SW SW NW section 29-2-7, an old well, was plugged back from 4,395 feet to 4,350 feet, and was recompleted for old potential of 2,997 bbls. Burke-Greis Oil Co. No. 2 Chambers, NW NE NW section 36-2-6, an old well, was plugged back from 4,419 feet to 3,825 feet; acidized with 10,000 gallons; made potential of 5,087 bbls. and was recompleted.

Hager & Sledge No. 1-A Hoggard, NW NE NW section 4-4-5, Bebee area, had sand at 1,561 feet; was bottomed at 1,595 feet; pumped 30 bbls. of oil in 12 hours and was completed.

Sinclair Prairie Oil Co. No. 2 Snow, NE SW SW section 28-5-8, Allen area, had sand at 792-806 feet; total depth, 807 feet; shot, swabbed 40 bbls. of oil in 20 hours, completed.

New work in Pontotoc County: Phillips Petroleum Co. No. 16 Norris, SW SE SW section 25-2-6, location; E. H. Moore and others No. 3 Smith B, NW NE NE section 36-2-6, old well, plugged back from 4,357 feet to 4,290 feet, waiting; Burke-Greis Oil Co. No. 4 Chambers, SE NE NW section 36-2-6, old well, plugged back from 4,433 feet to 4,353 feet, waiting; Arrow Drilling Co. and Loual Drilling Co. No. 1 Lewis, SE SW SE section 19-2-7, rig; Magnolia Petroleum Co. No. 3 Morin, SE NW SE section 20-2-7, location; Fleetborn Oil Corp. No. 6-A Morin, NW SE SE section 20-2-7, set 10-inch casing at 515 feet; Magnolia Petroleum Co. No. 10 Norris, SE NW SE section 21-2-7, cellar and pits; Amerada Petroleum Co. No. 9 Woolley, NW SE SE section 21-2-7, building rig; E. H. Moore and others No. 2 Deaner, SW SW SE section 23-2-7, building rig; Blackstock No. 6-A Moody, SW NW SW section 23-2-7, building rig; Magnolia Petroleum Co. No. 30 Metropolitan Life, SW NE SW section 27-2-7, cellar; E. H. Moore and others No. 1-A Mack, SW NW SE section 28-2-7, cellar and pits; Magnolia Petroleum Co. No. 5 Smith, NE SE NW section 28-2-7, cellar and pits; Carter Oil Co. No. 13 Smith, SE NE SW section 28-2-7, building rig; E. H. Moore and others No. 5-B Woodruff, NE NE SE section 29-2-7, building rig; Magnolia Petroleum Co. No. 17 Simpson, SW SE NE section 29-2-7, building rig.

Okfuskee County

Five new wells were completed in the Okfuskee County sector of the Olympic field. Earl Evans No. 3 Smith, NW NE NW section 36-10-8, topped Senora sand at 1,721 feet; total depth, 1,741 feet; shot and swabbed 523 bbls. of oil in 24 hours, later pumped 331 bbls. in 24 hours, completed. Blackwell Oil & Gas Co. No. 15 Dalton, SE SW NE section 36-10-8, pumped 225 bbls. of oil after a shot and was completed at 1,733 feet, total depth. Top of Senora sand was 1,714 feet.

Hinckel & Delaney No. 1 Lewis, SE cor. section 7-10-9, had Senora sand at 1,875 feet; was bottomed at 1,914 feet; plugged back to 1,911 feet; shot and swabbed 101 bbls. of oil and 25 bbls. of water in 18 hours, initially. Ark Royalty Co. No. 3 Parsons, NE SW NE section 18-10-9, found Senora sand at 1,848 feet; total depth, 1,882 feet; shot and flowed 440 bbls. of oil and 89 bbls. of water, initially, in 20 hours. Later, it swabbed 240 bbls. of oil and 10 bbls. of water in 24 hours. Sinclair Prairie Oil Co. No. 3 Fisher, SW cor. section 19-10-9, flowed 315 bbls. of oil in 24 hours after a shot. Top of Senora sand was 1,784 feet; total depth, 1,819 feet.

W. B. Wells No. 3 Clark, SE NE NW section 11-10-11, Weleetka area, had a hole full of water in Gilcrease sand at 2,448-60 feet, total depth, and was dry and abandoned.

Grimes & Neal No. 5 Wind, SW SE NE section

35-11-9, Okemah district, had sand at 1,456-1,500 feet, total depth, and pumped 12 bbls. of oil, completed.

Deep Rock Oil Corp. No. 3 Palmer, SW SE SE section 23-12-11, had Deaner sand at 2,592-2,625 feet; total depth, 2,628 feet; plugged back to 2,625 feet, and swabbed and flowed 101 bbls. of oil in 24 hours, completed.

First reports of new work in Okfuskee County: Manahan Oil Co. No. 2 Bunner A, NE SE SE section 24-10-8, cellar; same operator's No. 18 Dalton, SE NE SW section 36-10-8, cellar; Earl Evans No. 2 Gooden, NE NW NW section 36-10-8, location; Ark Royalty Co. No. 6 Fisher, SE NW SE section 18-10-9, drilling at 1,440 feet; Chapman & McFarlin No. 4 Yarbrough, SE SE NE section 18-10-9, set 10-inch casing at 42 feet; Oklahoma Oil Corp. No. 2 Ott, SE NW NW section 19-10-9, location; Chapman & McFarlin No. 5 Williams, NE NW NW section 30-10-9, rig.

Hughes County

One well was completed in the Okfuskee County sector of the Olympic field. It was Manahan Oil Co. No. 7 Oliphant E, SW SW NW section 1-9-8. Top of Senora sand was 1,712 feet; total depth, 1,723 feet. It was shot and flowed 377 bbls. of oil in 24 hours through tubing.

Devon Oil Co. No. 1 Diamond, C NE SW section 5-8-10, topped Cromwell sand at 3,168 feet, was bottomed at 3,177 feet, produced 12,000,000 feet of gas, with 1,000 pounds rock pressure, and was completed.

Two new tests were reported in Hughes County. Olympic Oil Co. No. 1 Norton, SE NW NW section 1-9-10, wildcat northeast of Wetumka, was a location. Marbett Oil Co. No. 1 Ispew, NE NE SW section 1-7-8, was a location.

Seminole County

Completions in Seminole County included one new oil well and four failures. Gulf Oil Corp. No. 1 Myrtle, C N half SW SE section 26-11-6, Keokuk area, was the oil well. It topped Misener sand at 4,107 feet; Hunton lime, 4,115 feet; total depth, 4,117 feet. It was acidized with 1,000 gallons and flowed 1,010 bbls. of oil in 24 hours, cutting 17 per cent basic sediment and 2 per cent water.

Reynolds Drilling Co. and Oklahoma Oil Corp. No. 2-A Fleet, NE NW SE section 13-6-7, topped Gilcrease sand at 2,801 feet, failed to get production by shooting and was dry and abandoned at 2,842½ feet, total depth. Marydun Oil Co. No. 1 Mullenssy, NW cor. section 5-7-7, was dry and abandoned at 3,258 feet, total depth. Rogers Oil & Gas Co. No. 1 Stubbs, NW NE SW section 16-9-7, East Seminole area, was temporarily abandoned at 3,503 feet, total depth.

Carter Oil Co. and others No. 1 Simpson, SW SW NE section 7-8-8, wildcat north of Wewoka, topped sand at 1,467 feet; Calvin sand, 1,745 feet; Senora sand, 2,020 feet; broken lime, 3,030 feet; Booch sand, 3,130 feet; Gilcrease sand, 3,235 feet; Wapanucka, 3,443 feet; Cromwell, 3,448 feet; Caney, 3,595 feet; Mayes, 4,050 feet; Woodford, 4,135 feet; Hunton, 4,181 feet; Sylvan, 4,335 feet; Viola, 4,410 feet; Dense, 4,445 feet; Dolomite, 4,450 feet; first Wilcox sand, 4,472 feet; second Wilcox, 4,490 feet; total depth, 4,505 feet; plugged

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back to 1,476 feet, produced 500,000 feet of gas, but flowed salt water and was dry and abandoned.

The following new work was reported in Seminole County: Lynch and others No. 1 Hyde, SW SW NE section 24-5-5, location; C. J. Wrightsman No. 4 May, NW SW SW section 25-10-7, location; Amerada Petroleum Corp. and others No. 1 Davis, NE cor. section 35-10-7, location; same company's No. 1 Marthla, NE SW NW section 36-10-7, location; same company's No. 3 Parks, NE SE SW section 35-11-5, building rig.

Osage County

Lewis Production Co. No. 3 Smith D, SE NE SW section 28-24-7, Naval Reserve area, Osage County, had Bartlesville sand at 2,560-2,644 feet; total depth, 2,649 feet; shot and flowed 113 bbls. of oil in the first 24 hours, completed.

E. O. Platter No. 8 Osage, SE SE NW section 30-22-9, produced 150,000 feet of gas from sand at 910-965 feet, and was completed after plugging back from 1,367 feet, total depth, to 1,000 feet.

Gulf Oil Corp. No. 1 Bearcat, NW cor. section 20-22-10, an old well in the Wildhorse area, was deepened from 1,834 feet to top of Mississippi lime at 1,915 feet; total depth, 1,947 feet. After flowing wild for two days, it was brought under control and flowed 1,785 bbls. of oil in nine and one-half hours, with gas estimated at 4,000,000 to 5,000,000 feet. Later, through one-half inch choke, it flowed 583 bbls. of 38.2 gravity oil, with 2,500,000 feet of gas, in 24 hours, and was recompleted.

New work in Osage County: Murray Ringold No. 1 Osage, section 25-21-8, 150 feet north of Pawnee County line, location; Johnson Oil Refining Co. No. 19 Osage, SE NW SE section 30-21-9, location; same company's No. 20 Osage, SE SE NW SE section 30-21-9, location; A. E. Purser and others No. 8 Osage, NE SW NE SE section 5-22-11, location; Link Oil Co. No. 9 Osage, CSL S half N half NW section 4-22-12, location; Tulsa-Osage Oil Co. No. 1 Osage, NW NW SE section 14-24-8, shut down because of crooked hole at 390 feet; Harland Oil Co. No. 81 Osage, NE SW NW section 25-24-11, rigging up machine; Carter Oil Co. and others No. 5 Mosier, NE SE SW section 34-26-6, location; Kewanee Oil & Gas Co. No. 4 Alfred, NW NW NE section 26-26-6, location.

Garvin County

Four new oil wells were completed in the Garvin County part of the Tussy field. Cox & Hamon No. 3 Davis, SE NW SE section 32-1-3w, topped lime at 1,660 feet, had several sand series, and was bottomed at 2,797 feet. It pumped 120 bbls. of oil in 24 hours. Wrightsmith Oil Co. No. 1 Yates, SW NW SW section 33-1n-3w, had oil sand at 2,380-2,423 feet; total depth, 2,720 feet; plugged back to 2,600 feet, and pumped 67½ bbls. of oil in 24 hours. Cox & Hamon No. 2 Davis, SW NE SE section 32-1n-3w, had oil sand at 2,592-2,624 feet and 2,740-69 feet; total depth, 2,789 feet; and pumped 62½ bbls. of oil in 24 hours. Skelly Oil Co. No. 1 Gross, SE NE SW section 32-1n-3w, had first oil sand at 2,125-29 feet, was bottomed at 2,410 feet and swabbed 25 bbls. of oil in 24 hours.

One new test was reported at Tussy. It was Cox & Hamon No. 1 Harris, SE SE NW section 32-1n-3w, location.

Cleveland County

Carter Oil Co. completed No. 2 Walker, NW NE SW section 27-10-2w, Moore pool, Cleveland County, at 7,323 feet, total depth. It flowed 4,683 bbls. of oil in four hours, with daily potential of 26,448 bbls. based on flow of 3,306 bbls. in the last three hours of test. Top of second Wilcox sand was 7,316 feet.

New tests at Moore: Sinclair Prairie Oil Co. and others No. 3 Bagby, SW SE NW section 27-10-2w, digging cellar; same operator's No. 4 Bagby, SE SW NW section 27-10-2w, digging cellar; Gulf Oil Corp. No. 3 James, NE NW SW section 27-10-2w, cellar and digging pits.

Pottawatomie County

Elbar Oil Corp. No. 4 Wyatt, NW NE NW section 10-7-4, St. Louis district, Pottawatomie County, topped Hunton lime at 3,700 feet; Sylvan shale, 3,993 feet and was completed at 3,994 feet. It was acidized with 1,500 gallons and pumped 71 bbls. of oil in 22 hours.

Falcon Oil Corp. No. 1 Vinson, NE SE NE section 13-7-4, was bottomed at 4,123 feet, plugged back to 4,080 feet and completed as a Simpson Dolomite producer. After acidizing with 2,500 gallons, it pumped 10 bbls. of oil in 24 hours.

Oklahoma Oil Corp. No. 3 Bruno, NE SE NE section 25-7-4, an old well, was deepened from 4,261 feet to Wilcox sand at 4,375 feet, and had a hole full of water at 4,380 feet, total depth. It was plugged back to 4,300 feet, shot and pumped 5 bbls. of oil and 100 bbls. of water in 24 hours, recompleted.

Amerada Petroleum Corp. No. 3 Goodman, NW NE NE section 5-10-4, was location for a new test in the Shawnee pool.

Estimated Daily Production

Estimated daily average production of Oklahoma for the week ending February 20, and for the preceding week, was as follows:

	Barrels	
	Feb. 20	Feb. 13
Allen	6,825	6,875
Burbank	7,775	7,800
South Burbank	15,700	15,750
Balance Osage	21,750	22,100
Blackwell district	4,925	4,950
Bristow-Slick	7,950	7,925
Chandler	3,800	3,725
Crescent	12,025	11,325
Cromwell	3,325	3,300
Cushing-Shamrock	10,650	10,700
Duncan district	3,950	3,975
Edmond	19,825	19,975
Fish	7,075	6,975
Fitts	81,450	80,976
Graham	4,775	4,800
Gray	1,225	1,250
Healdton	9,725	9,775
Hewitt	4,400	4,425
Holdenville	900	925
Keokuk	10,100	8,150
Konawa	1,600	1,625
Lucien	12,900	13,000
Marshall-Lovell	875	875
Oklahoma City	147,900	159,200
Olympic	14,500	13,725
Papoose	1,000	950
Polo	1,675	1,725
Sasakwa and townsite	3,000	2,950
Sholem-Alechem	3,350	3,375
Seminole:		
Bowlegs	12,525	11,400
Carr City	5,975	6,275
Earlsboro	5,825	6,375
South Earlsboro	775	750
East Earlsboro	7,675	7,650
Little River	11,200	11,425
East Little River	1,200	1,250
Maud	825	775
Mission	2,325	2,275
Seminole	10,275	10,400
East Seminole	3,950	3,675
Searight	4,900	4,350
Total Seminole	67,450	66,600
St. Louis-Pearson	22,225	22,325
Tatums	4,400	4,425
Tonkawa-Garber-Thomas	5,800	5,775
Wewoka	3,625	3,650
Yale-Jennings	4,175	4,250
Other pools	76,200	74,499
Total Oklahoma	608,825	614,625

Noble County

Phillips Petroleum Co. and Shell Petroleum Corp. No. 5 McCaughtry, SE SW NE section 21-23-2w, Billings pool, Noble County, topped Wilcox sand at 4,267 feet; total depth, 4,328 feet. On 6-hour potential test, it flowed 785 bbls. of oil, producing 504 bbls. in the last four hours and making potential of 3,026 bbls.

New work in Noble County: Sun Oil Co. No. 3 Pfeiffer, NW NW SW section 33-20-2w, digging cellar; Tide Water Associated Oil Co. No. 3 Hackett, SE NW SE section 21-23-2w, location; Phillips Petroleum Co. and Shell Petroleum Corp. No. 7 McCaughtry, NE SW NE section 21-23-2w, digging cellar; same operators No. 8 McCaughtry, SE NW NE section 21-23-2w, location.

Pawnee County

The single completion in Pawnee County was Tuttle No. 1 Hogan, NE NW SW section 36-30-7, Terlton area. It had a hole full of water at 2,811 feet, total depth, and was dry and abandoned.

Oklahoma County

Only completion in Oklahoma County was Sunray Oil Co. and Phillips Petroleum Co. No. 4 Harn, SW NE NW section 27-12-3w, Oklahoma City field. It topped second Wilcox sand at 6,430 feet; total depth, 6,490 feet; flowed 129 bbls. in two hours and made potential of 1,543 bbls. on gas lift.

First reports of new Oklahoma County work: Jones & Shelburne No. 1 Mitchell, SE SE SW section 15-12-3w, rig and moving in tools; Anderson & Kerr Drilling Co. No. 1 Dawson, SE SW NW SE

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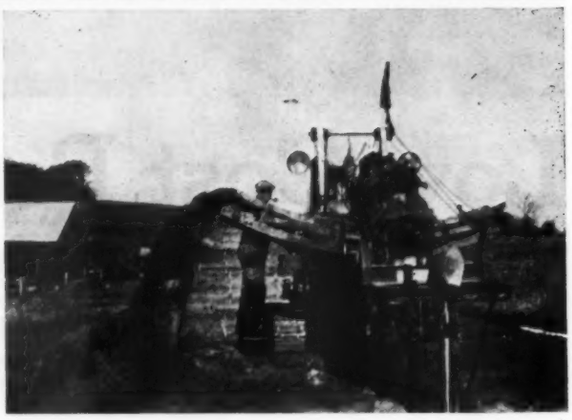

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section 27-12-3w, building rig; Inland Development Co. No. 1 Howe's Capitol, NW SE NW SE section 27-12-3w, rigging up rotary; Transwestern Oil Co. and others No. 1 McGrew, SW cor. section 20-13-3w, old well, rigging up rotary to deepen.

Payne County

Deep Rock Oil Corp. and Continental Oil Co. No. 1 Hawk, SE NW NE section 9-18-5, West Norfolk area, Payne County, an old well, was deepened from 2,871 feet to Wilcox sand at 3,554 feet; new total depth, 3,596 feet; flowed 147 bbls. of oil through tubing in 24 hours and was recompleted.

Sand Springs Home and others No. 1-A Wallace, SE NE NE section 5-11-5, Garr area, was a rig. It was to be a Bartlesville sand test.

Texas County

Allison & Barnhill completed No. 1 Bingley, SE SE NW section 30-2n-18ecm, wildcat in Texas County, Oklahoma Panhandle, after plugging back from 2,919 feet to 2,750 feet. It was shot and produced 4,100,000 feet of gas. It had first showing of gas at 2,661 feet; topped sand at 2,893 feet and had a hole full of water at 2,898-2,919 feet, total depth.

Creek County

Wood Oil Co. No. 1-A Deere, C NW SW section 7-17-7, Cushing-Drumright area, had Wheeler sand at 2,393-2,433 feet; total depth, 2,434 feet; acidized with 5,000 gallons and swabbed 75 bbls. of oil and 4 bbls. of water in 24 hours.

Curtis Oil Co. No. 1-A Ford, SW SE NW section 10-19-9, Mannford area, topped Skinner sand at 2,090 feet; total depth, 2,137 feet; shot and pumped 70 bbls. of oil in 24 hours. It was plugged back to 2,110 feet to complete.

Johnson Oil Refining Co. No. 4 Flinchum, CSL NE SW section 11-19-9, had Layton sand at 1,155-76 feet, was bottomed at 1,186 feet and plugged back to 1,180 feet. It was shot and pumped 20 bbls. of oil in 24 hours.

New work in Creek County: Spartan Supply Co. No. 13 Lee, C N½ SE NE section 12-18-11, drilling at 350 feet; Texas Co. No. 1-A Jefferson, C NW NW section 28-18-12, spudded; Jo-Gail Oil Co. No. 1-A Edwards, NW NE SE section 28-18-12, spudded; Jackson & Wise No. 1 Fee, NE NE SE section 14-19-9, rigging up machine.

Okmulgee County

A gas well was completed in Okmulgee County at Vandeventer No. 1 Jefferson, CNL SE NE section 33-16-13. It had sand at 1,476 feet; total depth, 1,510 feet, and produced 8,000,000 feet of gas.

First reports of new work in Okmulgee County: L. Stekoll and others No. 12 Hawkins, C S half SE section 6-11-12, location for a 2,400-foot test; Barnes and others No. 1-A Lunsford, C N half SE SW section 16-14-11, location; E. J. Lambert No. 1-A Franklin, SE SW SW section 27-14-14, drilling at 300 feet; E. D. Misener No. 11 Francis, SE SW NW section 11-15-14, location.

Coal County

Continental Oil Co. completed No. 1 King, NE SW NE section 26-1n-8, wildcat in western Coal County, southeast of the Jesse pool in Pontotoc County, as an Atoka sand producer. It topped sand at 790 feet and showed saturation in cores below that depth. It was deepened and topped Wapanucka at 1,743 feet; Union Valley, 2,552 feet; Mayes, 4,056 feet; Woodford, 4,147 feet; Hunton, 4,354 feet, with a showing of oil; Sylvan, 4,687 feet; Viola, 4,833 feet; Bromide, 5,145 feet; McLish, 5,452 feet; Wilcox sand, 5,743 feet; total depth, 5,762½ feet; cores tested salty. It was plugged back to 836 feet, pumped 69 bbls. of oil in 8½ hours and was completed.

Continental Oil Co. No. 1 Kirby, SW SE SW section 23-1n-8, wildcat, topped Wapanucka at 2,518 feet; Union Valley, 3,672 feet; Mayes, 4,410 feet; Woodford, 4,455 feet; Hunton, 4,662 feet and was dry and abandoned at 4,690 feet, total depth.

Continental Oil Co. No. 1 Breedlove, NW SW SW section 24-1n-8, wildcat, was dry and abandoned at 6,054 feet, total depth, when cores had a sulfur odor and were salty. It topped Wapanucka at 3,156 feet; Union Valley, 3,845 feet; Woodford, 4,612 feet; Hunton, 4,814 feet, with a showing of oil; Sylvan, 5,105 feet; Viola, 5,249 feet; Bromide, 5,520 feet; McLish, 5,760 feet; Wilcox sand, 6,045 feet.

Carter County

Sun Oil Co. and others No. 34 Mullin B, SE NW SW section 3-4s-3w, Healdton field, Carter County, was completed at 1,035 feet, total depth, pumping 12 bbls. of oil in 24 hours. Kewanee Oil & Gas Co. No. 8 Ferguson, NE SE NW section 6-4s-3w, was bottomed at 1,153 feet; plugged back to 1,143 feet, and pumped 100 bbls. of oil and 51 bbls. of water in the first 24 hours. Carter Oil Co. No. 39 Ward, SE NE NW section 6-4s-3w, was bottomed at 1,139 feet and pumped 50 bbls. of oil in 24 hours, completed.

Samedan Oil Co. No. 15 Higgins, SE SE NW section 7-2s-2w, Ed Cox pool, had sand series beginning at 2,353 feet; total depth, 2,625 feet, pumped 43 bbls. of oil in 24 hours and was completed.

Kreola Oil & Gas Co. No. 1 James, NW NE NW section 10-4s-3w, Healdton, an old well, was deepened from 1,070 feet to 1,077 feet, increased production from one bbl. of oil to three bbls., and was recompleted.

New Operations

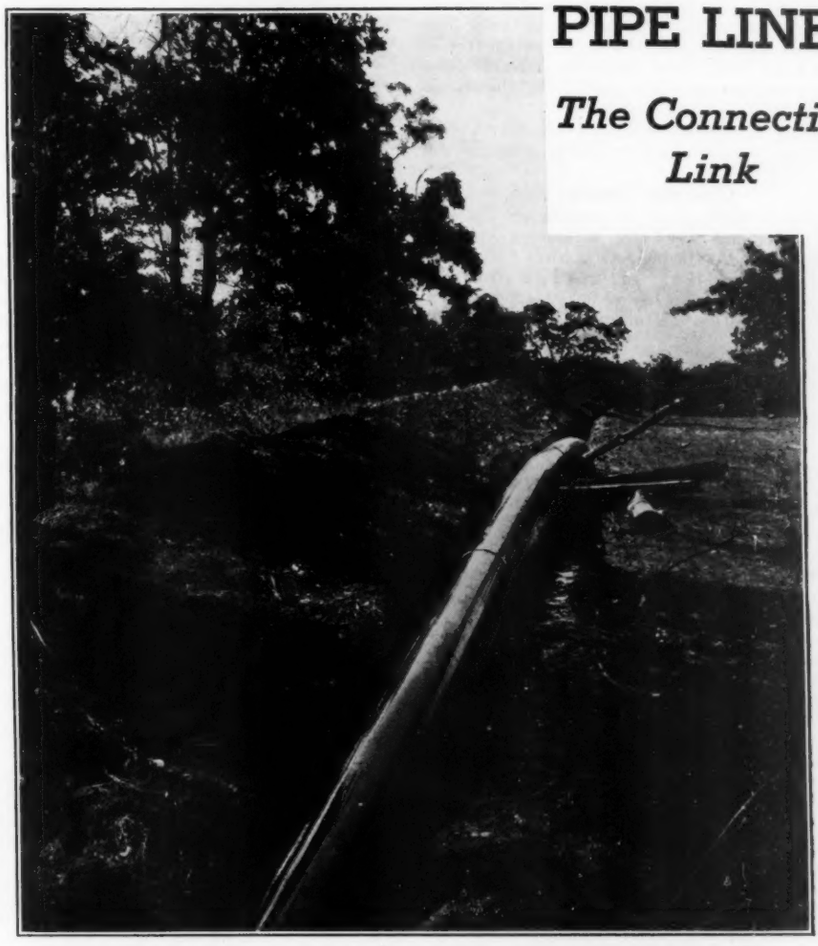
Helmerich & Payne and others No. 1 Fred Ruck, C NE SE section 9-19-2w, Logan County, wildcat southeast of the Lucien field, had erected rig corners. Texas Co. No. 5 Denny, NE NW SE section 33-17-4w, Crescent area, was building rig.

In Caddo County, Clyde Becker and others No. 1 Pharris, SE SE NW section 24-6-12w, had dug cellar and pits. This is a wildcat southwest of Anadarko and northwest of Apache.

In Stephens County, Mudge Oil Co. No. 10 Robberson, NE SW SW section 10-3s-5w, Loco area, had dug pits.

In Beckham County, Mid-American Oil Co. No. 1-A Biscoe, SW cor. section 28-8-22w, was rigging machine.

In Harmon County, Penn State Oil Co. No. 1 Cole, C W half SW NW section 21-2n-26w, wildcat south of Hollis, was a location.



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By
PAUL A. ELLIOTT

MUSKEGON, Mich., Feb. 22.—The R. E. Olds company, of Lansing, last week paid $48,000 for a lease on 40 acres of state of Michigan land, in Buckeye Township, Gladwin County, the highest amount ever paid for any state lease. Bids on two other tracts in Buckeye Township brought the total for 180 acres up to $99,600, including $30,100 paid by the Gordon Oil Co. for an 80-acre tract and $21,500 by the Wicklund Development Co. for a 60-acre lease. It has been estimated state royalties on these tracts will yield $300 a day based on nearby completed wells.

Thirty-four tests are drilling in Buckeye Township where six wells already are producing.

Gladwin County

Although there were no completions in the Buckeye area last week, the Rowmor Corp. had about 500 feet of oil in the hole in No. 1 State, NW NW NE section 36-18-1w, and was tubing to treat and produce as soon as possible a well which topped the Dundee at 3,492 feet and was drilled to 3,612 feet.

Four other Buckeye tests were near the Dundee, namely: Smith & McClanahan No. 1 Brenner, SE SE SW section 11; Mammoth Producers & Refiners Corp. No. 1 Ockerman, SE NE SW section 11; Wicklund Development Co. No. 2-A State and Double-K Trust No. 2-A State, the former in SE SW SE section 11 and the latter NW NW NE section 14, all in Township 18n-1w.

Beaverton

Hopes for confirming the southern part of Beaverton Township, about five miles from the first Gladwin County oil field opened about 18 months ago by M. F. Whitehill, were seen in the showing struck in the Frank T. Schooneas, trustee No. 1 Yager test, SW NE NE section 36-17n-2w, Beaverton. About 1,500 feet of oil rose in the hole at 3,843 feet and it was testing in the Dundee with slightly deeper drilling and acid treatment planned before completion.

Archie M. Henry got a dry hole in No. 1 Edward Little, NE NE SE section 36, same township.

Clayton-Arenac

More than half the new oil production of the state was represented in two completions in Clayton Township, Arenac County, though neither was as large as earlier wells in the new field, leaving operators somewhat doubtful whether the Clayton pool will develop into a major oil producing area as first anticipated.

Gordon Oil Co. No. 1 Crandall NE NE SE section 10-20n-4e, made 320 barrels the first 24 hours after acid treatment at a total depth of 2,501 feet. On a nearby lease Charles E. Weller completed a 137-bbl. initial Dundee producer in No. 1 Crandall, NW SW NE section 10, total depth at 2,590 feet.

The T. F. Caldwell, Inc. No. 1 Peavy, NW SW NE section 9 was about to be abandoned as a failure when it filled up 825 feet with oil striking the pay lower than anticipated. It was to be acidized.

Gulf Oil Co. was swabbing No. 1 Kaiander, NE SE NW section 10 after striking 250 feet of oil at 2,578 feet, in the Dundee. Turner Petroleum also was treating a showing at 2,590 feet, 128 feet in the Dundee. Devonian Oil Co. also was testing the Dundee in its No. 1 Crandall, NW SE SE section 10, while the McClanahan Oil Co. No. 2 Seignious, on the discovery lease, NE NW NE section 10, American Drilling Co. No. 1 Packer, SW NE SW section 14 were near the Dundee. Turner Petroleum Co. No. 1 Thompson, NW SE SE section 8, same township, had 600 feet of oil in the hole 178 feet in the Dundee and was also testing in the No. 1 McKay, NE SW SE section 10.

Sherman—Isabella

Future possibility of a major extension of the new Sherman township, Isabella County pool, rested with the Charles Strange No. 1 State test, SW SE SE section 34-15n-6w, which struck a show of oil and gas in the Monroe after casing at 3,640 feet.

Ogemaw County

Weber Oil Co. made a 225-bbl. initial well of No. 3 Fisk, SE NW SW section 27-22n-2e, West Branch Township, Ogemaw County, by acid treating the Dundee drilled to 2,717 feet.

Richland Oil Co. set casing at 2,438 feet in No. 3 Husted, SE NW SE section 36, same township, and was treating a show of oil in the Dundee. Morris-Barnes Oil & Gas Corp. tubed No. 7 Golf Club, NW NE SW section 20, same township, at 2,748 feet and was expecting commercial production this week after acidizing. Dunnigan and Fothergill were about to test the Traverse in the No. 1 Christman, SE SE SE section 19, West Branch Township, near another Traverse producer.

Smith Petroleum developed settled production of about 30 bbls. a day in No. 1 Ellis, SE SE SE section 14-22n-1e, Ogemaw Township and County, in which Dundee oil was found at 2,845 feet, about 126 feet in the formation and from which the crew had swabbed from 25 to as high as 75 bbls. a day over a several weeks' period.

Midland County

Pure Oil Co. has a 100-bbl. Dundee producer in the Jasper Township, or Yost section of the Porter-Yost field, in No. 17 Bond-Root, N half NW NE Section 3-13n-2w, completed at 3,450 feet after topping the limestone at 3,423 feet.

Montcalm County

Daily Crude Oil Co. treated No. 1 Weatherby, discovery Dundee well in section 20, Winfield Township, Montcalm County, with a heavy charge of acid which increased the output to 139 bbls. in the first nine hours. The well later settled to 25 bbls. a day. No other tests have been started in the vicinity since the Weatherby was brought in some months ago.

Gratiot County

In Gratiot County Roy F. Ide No. 1 Beeson, C SW NW section 3-10n-4w, made 5,600 feet open flow from the Michigan Stray sands.

American Production company got two "dusters," the No. 1 Browne, C SW SW section 2 and the No. 1 Akin, C NE SE section 3, same township, both Michigan Stray gas tests.

Ravenna-Muskegon

Muskegon Development Co. struck a flow of 304,320 feet of gas in the Berea formation in West Michigan Consumers Co. No. 1 Thompson and others, C SE section 5-9n-16w, Ravenna Township, Muskegon County with prospects of considerably increasing the flow after drilling has been completed and the test shot with a sand-tamped charge of nitroglycerin. Berea was topped at 1,221 feet with gas from 1,222 to 1,224 feet at the last report Saturday.

Flow of the Lentz and Miller No. 1 Clink Estate well in Sullivan Township, which originally made more than 3,000,000 feet from the Berea while on the way to test lower oil sands, was gauged at 700,000 feet after plugging back but before cleaning out following a heavy shot of 100 quarts, sand-tamped and the hole bridged.

Wildcats

The Lentz & Miller, Inc. No. 1 Raab test, which several weeks ago indicated a new western Michigan oil field in Salem Township, Allegan County, was swabbing about 35 bbls. a day from the Upper Traverse at about 1,600 feet last week and delaying treatment with acid pending the swabbing test. It is located NW SW NW section 16-4n-13w.

Dibble Brothers cased the No. 1 Edward S. Townsend, C E half NW NW section 22-20-7w, Marion Township, Osceola County, at 3,765 feet and were about to drill into the Dundee with structures reported running 210 feet high.

Witherow, Rodgers & Anderson completed a dry hole in No. 1 Ross, SE NE NE section 23-6s-5e, Ridgeway Township, Lenawee County, near the southern state line, drilling into the Trenton to 2,515 feet without success.

Monroe County

Two tests in the Monroe County Trenton field were unsuccessful, the A. V. Oil & Gas Co. abandoning No. 1 Bragg, SE SW NW section 30-6s-6e, Dundee Township, after striking a boulder at about 120 feet and Nicholas Huffmaster getting a "duster" in the No. 1 Bordine, NW SE NW section 16-5s-6e, both in the southeast section of the state. The A. V. Oil & Gas Co. No. 2 Roe, SE SE SW section 19, Dundee Township, was nearing Trenton formation.

Eastern Fields

(Continued from Page 204)

gas at 1,885-90 feet and 1,935-64 feet. The gauge is 1,000,000 feet a day. In Sherman district, Godfrey L. Cabot, Inc., completed a second test on the H. M. Buckley farm at a total depth of 2,171 feet. The Big Lime was at 1,975-2,038 feet, the Keener 2,038-86 feet, Big Injun 2,086-2,117 feet with about 60,000 feet of gas before shot at 2,105-17 feet.

In Gilmer County, Massey & Jarvis completed a test on the William Clovis farm in Glenville district as a gas well at a depth of 1,818 feet. The Big Lime was at 1,665-1,760 feet; Big Injun 1,760-1,818, with about 29,112 feet of gas at 1,785-90 feet.

In Pleasants County, the Boyer Drilling Co. completed a 37,300-foot gasser on the Solomon Robinson farm in McKim district at 1,850 feet, Keener sand.

In Ritchie County, Leeton & Flanigan completed a test on the John Ross farm in Grant district in the Maxton sand at a depth of 1,854 feet as a gas well gauging 856,000 feet a day. In Murphy district, W. H. Bickel completed No. 3 John Hyman in Injun sand at 2,213 feet. It gauged 500,000 feet a day after a shot. In Union district, W. M. Stroler test on the S. P. Burbridge farm gauged 1,500,000 feet per day from Salt sand at 1,700 feet.

In Roane County, the Lowther Brothers drilled a dry hole on the John L. Kee farm in Harper district through the Salt sand to 1,475 feet. In Burnings Springs district, Wirt County, the deep test of Glenn W. Roberts and others on the Roberts Oil Co. lease was drilled through the Oriskany sand to 5,101 feet and is dry.

Southwest Texas District

By
GEORGE WEBER

COMPLETIONS EXCEEDED BY INCREASED NEW LOCATIONS

CORPUS CHRISTI, Feb. 22.—Major developments resulting from the past week's drilling activity in Southwest Texas consisted of minor discoveries in scattered sections, and of extensions and probable extensions to various fields. Drilling activity continues the upward swing, with the number of new locations staked in both field and wildcat territory exceeding the completions. A marked trend in drilling is the practice of going back into old fields which have not seen activity for some time and drilling in search of deeper production. A number of fields are seeing revived activity of that sort since the first of the year. The number of abandonments during the past week was above average, limiting production in several fields, and making failures in wildcatting areas in all parts of the section.

Drilling in the newly discovered fields of Southwest Texas is progressing to a point where several new wells may be in by next week. The week also marked the completion of some tests which made news a week or more ago when they indicated field extensions and new producing areas.

In Jim Wells County, O. W. Killiam apparently has opened an oil horizon with No. 8 Wade. The test, in the Sandia gas field, in the northeastern corner of the county, cored sand at 4,018-23 feet. A week ago it tested oily mud on a drill-stem test, and by the end of this week was flowing about 3 bbls. of oil per hour on a one-eighth inch choke. Further drilling in the field may substantiate the importance of this discovery.

Late in the week the show of oil in W. B. Craig No. 1 Drainage Ditch, a San Patricio wildcat, led operators to believe that an extension to the Taft field was probable. The test is located in the center of a drainage ditch, about 1 mile to the west of the field. Hard sand cap was cored at 4,907-10 feet and the show of oil was found in the underlying sand, of which 1 foot has been cored. The test is shut down for repairs, and will resume shortly to the considerable interest of many Lower Coastal operators. The sand corresponds to the 4,900-foot horizon producing in the Taft field. Completion of this test will greatly enhance the importance of Taft, which has recently extended to the north and west by considerable drilling activity.

Bee County

In the Beeville area, two minor discoveries were made during the week. In Bee County the Illinois Petroleum Co. (formerly Two Rivers Oil Co.) No. 1 Hartzendorf in the George A. Kerr Survey was rigging up to pump after perforating casing at 3,648-50 feet and swabbing some oil. Pettus sand was cored at 3,648-58 feet and the test was carried to a total depth of 3,907 feet before plugging back to that sand. It may constitute a mile northeastward extension to the old Cosden field.

Another old field which seems due for an extension is Slick, in DeWitt County. Southwestern Development Syndicate has tested oil in No. 1 Poetter, and will attempt completion early this week. The test is in the O. Marshall Survey, about 1,320 feet from the discovery well in the Slick field. The field sand was cored in No. 1 Poetter at 4,220-40 feet. After a 10-minute drill-stem test, which showed a blow of gas, a 15-minute test was made at 4,221-40 feet. About 45 feet of oily mud was recovered, together with some gas, under a working pressure of 290 pounds. Operators have set 5½-inch casing on the sand.

Field Extensions

In the Fault Line Zone, activity which has been increasing for the past several weeks, resulted in the extension of the Clark or Southwest Darst Creek field of Guadalupe County, and the reported opening of a small producing area in Caldwell County. La Jita Corp. completed No. 1 Denman in the chalk at 2,279-2,332 feet for 145 bbls. per day after acidizing. The test is located about one-half mile northwest of the Clark field. In Caldwell County, to the northeast, reports of a small producer, McDaniels No. 1 Tinkle in the Seal Survey point to a new field there. Also in the Fault Line, a small well was completed 1 mile south of the Von Ormy field of Bexar County.

Nueces County

Nueces County, in the lower coastal area led Southwest Texas in drilling activity during the week. With 13 completions in the Saxet field, that area gained new producers in several of its proven sands, besides two wells which opened new production and extended already producing fields. The Republic Natural Gas Co. No. 3 Ordner, which several days ago indicated production in the field's deepest sand to date, was completed during the past week for 128 bbls. per day on a one-eighth inch choke. The new sand was cored at 6,906-12 feet. Pressures recorded in the production test of the well were 2,150 pounds on the tubing and 2,600 pounds on the casing.

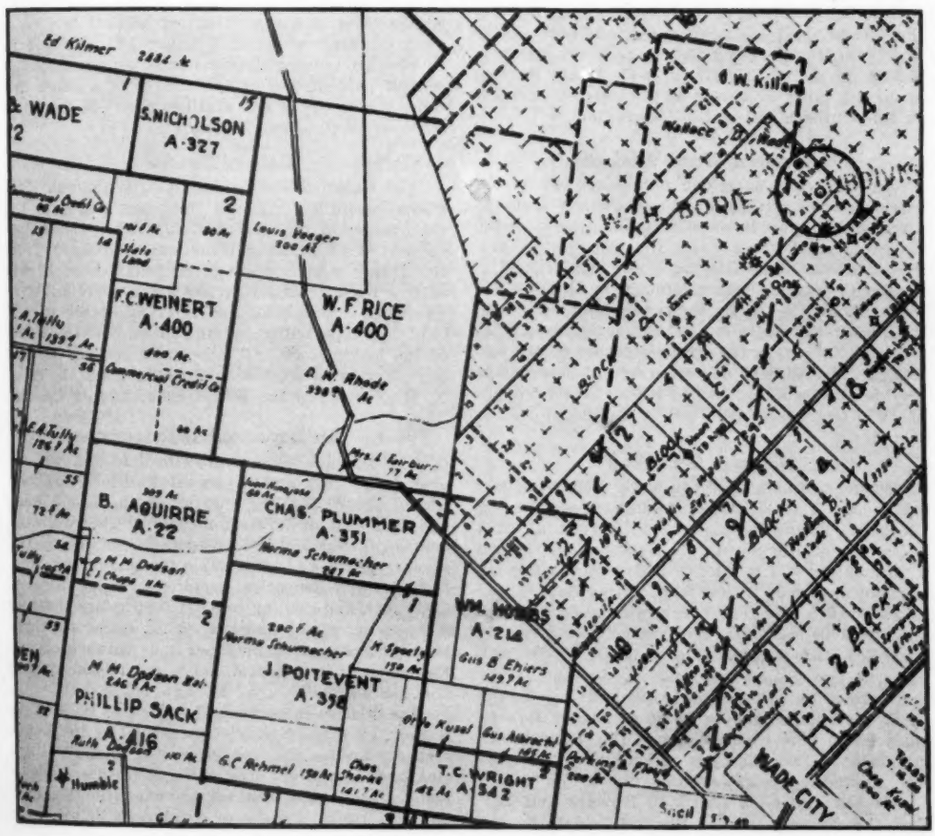
The same operators also brought in No. 3-A Donigan jetting 4 bbls. per hour, marking a 4,900-foot eastward extension to the 4,500-foot sand.

Extends Clarkwood Pool

South of Clarkwood, Bryant and others put the No. 1-A Kocurek on the pump, making 182 bbls. per day. The test was drilled offsetting No. 1, which blew out and cratered several weeks ago before killing itself. No. 1-A is nearly a mile south of production in the Clarkwood area of Saxet. It was completed through perforations made at 4,118-23 feet. Other producers were brought in the field from the 4,200-foot, 4,400-foot, 4,500-foot, 4,800-foot, 5,800-foot and 6,700-foot horizons.

In the western section of Nueces County, one new producer was completed in the Clara Driscoll field. Wellington Oil Co. brought in No. 4 Sevier for 834 bbls. per day on a three-eighths inch choke, one of the best wells in the field. The test is bottomed at 3,815 feet with production coming from 6 feet of the sand. In the same field, Wellington and Pan American No. 1-A Sevier, which has been reworked for several weeks, made 12 bbls. per day on a three-sixteenths inch choke at 5,427 feet and then sanded up. A closed-in casing pressure of 2,100 pounds has been recorded on the test.

(Continued on Page 228)



O. W. Killam No. 8 Wade is flowing a small amount of oil from sand cored at 4,018-23 feet to indicate the opening of a new horizon in the old Sandia gas field. The field, which is in the northeast corner of Jim Wells County, has seen little activity in several years. The new discovery may bring additional rigs to the area to test the possibility of developing an oil pool. (Porter Regenold—Corpus Christi)

West and North Texas

By
L. E. BREDBERG

IMPORTANT DEEP DISCOVERY IN WILBARGER COUNTY POOL

FORT WORTH, Tex., Feb. 22.—The striking of an enormous volume of nitrogen gas in a wildcat 4 miles east of Big Spring in Howard County, a good showing of oil in a wildcat in southern Ector County, staking of an Ordovician test in Crockett and several other wildcat locations in various parts of the district, were the features of the week in the West Texas district.

New Discovery

G. F. Getty, Inc. No. 1 Lindley-Conoco, located in section 8, Block A-46, Andrews County, about 2 miles west of the Deep Rock pool, and the same distance north of two producers on the Kuykendall ranch, is proving a producer. The latest report from the well stated it swabbed 108 bbls. of oil in 18 hours, leaving 300 feet of oil in the hole at the end of the swabbing test. Pumping equipment is to be installed, the well is sure to make a commercial producer on the pump. Total depth is 4,642 feet, and the first oil and gas was logged at 4,612-23 feet. The oil tests 31.7 degrees in gravity. The well is on a Continental Oil Co. farmed out lease.

Extension

The old Cowden field in Crane County has been given a half-mile western extension by C. J. Dickson on the Ed Hughes ranch, in section 88, Block X, C.C.S.D.&R.G.N.G. Survey. Before acidizing it pumped 60 bbls. per day from lime topped at 2,390 feet, and with total depth of 2,478 feet. It was later shot with 40 quarts of nitroglycerin at 2,453-78 feet, and another 40 quarts at 2,390-2,410 feet, swabbing 58 bbls. in two hours after shooting. It is now testing after having been acidized. This producing area is northwest of the McCamey field. It was small in area, and had been on the decline for years until operators started drilling exploration wells on the edges of the old McCamey field in Upton and Crane counties, which added considerable territory to production in that old area and the Cowden pool.

Another Test

The recently opened Mason field in northwestern Loving County will soon see its second test started on the Minnie Kyle ranch, 660 feet west of the discovery well, and in section 20, Block 55, Township 1, T.&P. Survey. It will be known as the Mason Oil Co. No. 3 M. Kyle, and rotary rig is being moved in on the location.

The discovery well in this pool, in section 20, is still shut in waiting for tubing and a pipe line connection. It topped the Delaware lime at 3,860 feet and sand at 3,895 feet, going to 3,903 feet before shutting down to shoot with 120 quarts at 3,853-98 feet. It flowed more than 300 bbls. per day while cleaning out and when tested through tubing is expected to be good for at least 400 bbls. of high gravity oil. Elevation of the discovery is 3,053 feet.

Considerable drilling is expected to take place in this newly opened area this year when and if the Pasotex Pipe Line Co., which owns an 8-inch line running within a short distance of the well, from Winkler County to the Standard of Texas' refinery at El Paso, connects the well and takes its daily allowable. The Mason Oil Co. holds most of the acreage around the test, but the Stanolind Oil & Gas Co. recently purchased two 80-acre tracts in the same section as the discovery, and other operators hold nearby leases, on which drilling may be forced by offsets.

The Mason Oil Co. is making plans to build a 10-mile pipe line from its discovery well south to a point where the Pasotex pipe line crosses the Santa Fe Railroad running between Pecos City, Tex., and Carlsbad, N. Mex., near the little town of Orla, and across the Pecos River in Reeves County. The company has erected a 5,000-bbl. storage tank, making a total of 14,000 bbls. of steel storage, with about 9,000 bbls. of oil already in tanks from the well.

Ordovician Test

The Superior Oil Co. of California has staked location for an Ordovician test in section 55, Block U, G. C. & S. F. Survey, on the J. S. Todd ranch, in Crockett County. The test will be carried down in quest of production from the Ellenburger if it does not prove a commercial producer from shallower horizons. Scheduled depth is 7,500 feet. Location is 1¼ miles southeast of a test drilled three years ago by the Stanolind Oil & Gas Co. and others on the same ranch. That well had good oil showings but failed to make a deep producer. It had an elevation of 2,660 feet, topped the Simpson at 7,006 feet and the Ellenburger at 7,247 feet.

Another Wildcat

H. S. Forgeron and others have staked an interesting wildcat in Andrews County, in the northeast quarter of section 20, Block A-41, about 6 miles west of the Fuhrman pool in the southern part of the county. Another interesting location, which may result in a considerable extension for the Means field in the northeastern part of the county, is Humble Oil & Refining Co. No. 1-B J. S. Means, in section 11, Block A-45, P.S.L. Survey, about 2½ miles southeast of the nearest producer on the southern end of the Means field.

Western Ward Wildcat

An area containing one producing well in the extreme western part of Ward County is to be given another test in quest of production from the Delaware sand, from which the lone well is producing, about 13 miles south of the Wheat field in Loving County. This new location is to be drilled by L. F. White, A. R. Eppenauer and others on the Rector-Monroe lands, in section 3, Block 1, W. & N. W. Survey, in the opposite corner of the section in which Shipley and others' No. 1 Monroe has been producing for about 5½ years at a total depth of 4,666 feet. Other tests drilled in the area have been dry.

Nitrogen Gas Well

During the middle of the week Westbrook and others No. 1 Great West, located in section 48, Block 32, Township 1n, T. & P. Survey, about 4 miles east of Big Spring, in Ward County, struck a flow of gas which when tested 4 hours after being struck, gauged 285,000,000 feet per day, falling to 258,000,000 feet four hours later, then down to an estimated 50,000,000 feet after flowing two or three days. An analysis showed the gas to be 99.5 per cent nitrogen, .4 per cent oxygen and .1 per cent carbon dioxide. Samples have been sent to the U. S. government helium plant at Amarillo to be analyzed to note whether or not the product contains any helium. The test is shut down at 1,460 feet, where the gas was struck.

Air has also been struck in Howard and Mitchell County tests, and in the Ira field in Scurry County, a number of miles to the northeast, oil producers have been pumped by air from nearby wells, the air acting as power similar to gas.

Outpost Showing

The wildcat test located about 3½ miles south of the Penn field in southern Ector County and about 5 miles northwest of the Waddell field in northern Crane County, is attracting more attention as it strikes further showings of oil and has swabbed considerable crude. Total depth is now 3,710 feet. It is located in section 12, Block B-22, P.S.L. Survey, Crane County, about 4 miles southwest of a hole drilled to 3,700 feet in section 32, Block 44, Township 3s, T. & P. Survey, Ector County, by the Continental Oil Co.

Outpost Test

The Pinerock Oil Co. and others have made location in an area in which there is one small shallow-oil producer and a gas well and in which several dry holes have been drilled in trying to extend the area on the White and Baker ranch, about 9 miles west of the Yates field in Pecos County. This new location is in section 5, Block 207, T. C. R.R. Survey, about a half mile north of the Gulf Oil Corp. No. 3 White & Baker, which in December, 1934, made 20 bbls. of oil per day at total depth of 1,826 feet.

Another outpost location for Pecos County is Humble Oil & Refining Co. No. 1 J. H. Tippett Ranch, in section 538, T. I. & M. Survey, about 2 miles north and a little west of the shallow Toborg-Tippett pool.

Taylor County Test

The Golden Petroleum Co. of San Angelo has staked location for a 2,500-foot wildcat test on a block of 4,000 acres in Leagues 120 and 144 in Guadalupe County School Lands Surveys, in the central part of Taylor County. It is a short distance southwest of two small pumpers and 6 miles south of another small pool.

Sale of Leases

The Ohio Oil Fuel Supply Co., Oklahoma City, which recently purchased the Iron Mountain Oil Co.'s leases in the Bryson field, Jack County, has entered West Texas and has made purchases from the Harry Adams Corp. and Regan & McElvain of two leases comprising 290 acres, including five producing wells having a daily allowable of 151 bbls. The reported consideration was $135,000. One of the leases is the SE quarter of section 89, and the other is in section 84, both in Block 1, W. & N. W. Survey, in the Wheat field, Loving County.

An Important Discovery

North Texas swung into the limelight when a deep well was brought in by the Phillips Petroleum Co. on the W. T. Waggoner lands, in the old Rock Crossing pool in Wilbarger County. This well, the company's No. 51 W. T. Waggoner, was completed several years ago producing from sand at 1,198 feet. It was deepened, topping a sandy lime at 3,069 feet, and drilling to 3,071 feet before shutting down to set casing and test. When tested for three hours it averaged 92 bbls. per hour through casing. Estimates of its potential range from 2,500 to 3,000 bbls. per day.

The well is in section 44, Block 4, H. & T. C. Survey, on a block previously owned by the Landreth Production Co. and later sold to the Phillips company. It will not only result in the deepening of many of the small shallow producers in the field, but will cause abandoned producers in the field to be cleaned out and deepened.

F. A. Lain, who recently abandoned a test at 3,506 feet in section 44, Block 15, H. & T. C. Survey, Wilbarger County, a couple of months ago, is preparing to carry it to a new contract depth of 6,000 feet. Several major companies have been

leasing in the area during the past few months. Location is on the Jennie Coffet lands, about 4 or 5 miles north of the Pease River.

The Denton County gasser of the Boliver Drilling Co. on the Knox lands, in the N. Howard Survey, about 12 miles northwest of Denton, was reported as good for only 1,250,000 feet of gas per day when tested by the Lone Star Gas Co. It was previously estimated as a 10,000,000-foot gasser. Total depth is 1,960 feet. One test is drilling near this discovery, and several others are slated for the area.

The Denver Producing & Refining Co. staked location for a 3,500-foot test on the T. R. Copeland lands, in Block 118, Belcher Subdivision, N. Kimbro Survey. It is a wildcat, located about 3 miles south of Belcherville in Montague County.

Another interesting Denton County test will be that of Mullens-Weil, Inc., just west of Lake Dallas, on a block of 4,000 acres in the southern part of the county. The test is to be spudded by March 1.

The La-Tex Oil Co. has moved in a rotary rig for a 4,200-foot wildcat test on the C. R. Smith farm, in the Jessie Couch Survey, 2 miles east of Bridgeport, in Wise County.

Grayson County

The Collinsville test in southwestern Grayson County, drilled by Rapp Drilling Co. and others on the Singletary farm, in the Quillen Survey, about 2 miles southeast of Collinsville, is standing with 1,800 feet of fluid in the hole after a shot, according to best reports. It will be given another jolt of nitroglycerin. Total depth was 4,012 feet, but it was plugged back to 3,877 feet to shut off water. Another test is going in about a mile north of this wildcat.

TEXAS PANHANDLE COMPLETIONS

Carson County

Empire Oil & Refining Co. No. 9-D Magnolia, 2,923-3,000 feet, shot, 668 bbls. on pump; No. 2-E Magnolia fee, 2,965-3,050 feet, shot, 843 bbls. on pump. Gulf Oil Corp. No. 11 Block, 2,970-3,109 feet, shot, 603 bbls. on pump. Magnolia Petroleum Co. No. 20 fee, 2,890-2,960 feet, shot, 753 bbls. on pump.

Gray County

Champlin Oil & Refining Co. No. 2 Lovett, 2,743-2,981 feet, plugged back to 2,881 feet, shot, 526 bbls. on pump. Kewanee Oil & Gas Co. No. 11-A Morse, 2,586-2,630 feet, shot, 276 bbls. on pump. Southern Petroleum Exploration Co. No. 7 Vaughn, 3,155-3,230 feet, 669 bbls. on pump. Texas Co. No. 5 Chapman, 2,587-2,682 feet, 788 bbls. on pump.

Hutchinson County

Gulf Oil Corp. No. 9 Pitcher, 3,145-3,210 feet, shot, 205 bbls. on pump. Harvester Oil Co. No. 6 Haile, 3,020-55 feet, shot, 845 bbls. on pump. Huber Petroleum Corp. No. 1 Herring, 2,612-2,826 feet, shot, 10,380,000 feet gas. Texas Co. No. 2 Herring, 3,126-40 feet, 458 bbls. on pump; No. 12 Lewis, 3,015-51 feet, shot, 447 bbls. on pump. Tripplehorn and others No. 5 Ware, 3,148 feet, 578 bbls. on pump.

Wheeler County

Palmer and others No. 1 Mertel, 1,960-2,075 feet, 11,800,000 feet gas.

CENTRAL TEXAS COMPLETIONS

Shackelford Field

Jones & Stasney and Maracaibo No. 1 Davis, total depth 1,740 feet, dry and abandoned. Craig Morton No. 2 W. H. Green, 810 feet, dry and abandoned. Tannehill, Kiser & Fleming No. 33 Mathews, 1,185 feet, dry and abandoned.

NORTH TEXAS COMPLETIONS

Archer County

Brown & Kriss No. 4 G. R. Campbell, 1,218-37 feet, 10 bbls. R. O. Harvey No. 2 Kinder, 1,381 feet, dry. Shappell Oil Co. No. 1 Campbell, 1,238 feet, dry. W. M. Waterman No. 1 Williams, 617 feet, dry.

Consolidated & Kelleher No. 1 Turbeville, 1,487 feet, dry. Hamilton Petroleum Co. No. 33 Pace, 1,180 feet, dry.

Cooke County

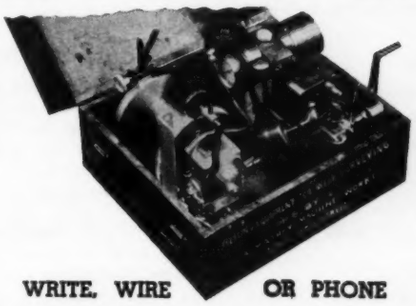
Anderson & Kerr No. 3 King, 2,070 feet, dry.

MATHEY PORTA-REEL UNIT

For Measuring Depth of Well.

To Locate Any Obstruction

Reel Capacity 12,000 feet.



To Locate Fluid Level.

To Run Bottom Hole Pressure Bomb.

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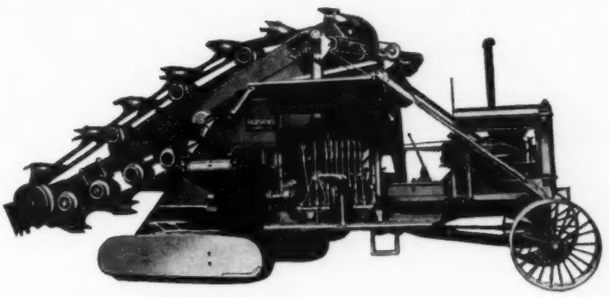

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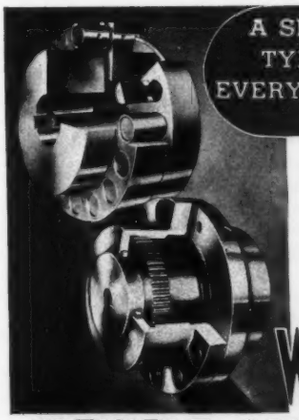

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Harrison & Dillard No. 1 Trew, 1,040-1,231 feet, 175 bbls.

Denver Producing & Refining Co. No. 1 A. M. Bezner, 2,276 feet, dry. Mack Oil Co. No. 1 Felderhoff, 705-28 feet, 10 bbls.

Clay County

Bridwell Oil Co. No. 3 Joe Stephenson, 330 feet, dry.

Montague County

D. L. Monroe No. 1 Sappington, 1,524 feet, dry. Raizen Brothers No. 5 Jones, 826-34 feet, 5 bbls. Reinhart & Witt No. 1 Cunningham, 951 feet, dry.

Sinclair Prairie No. 4 Holt, 1,658-1,753 feet, 240 bbls.

Jack County

Beard & Collier No. 1 Bryson, 3,100-3,201 feet, 110 bbls. Bennett Petroleum Co. No. 5 Chambers, 2,976-85 feet, 800 bbls.; No. 4 Clayton, 2,990-3,016 feet, 395 bbls. J. B. Collier No. 1 W. R. T. Ezzell, 2,915-52 feet, 525 bbls. Hamilton Petroleum Co. No. 3 Kuykendall, 2,378-83 feet, 20 bbls.

Wichita County

C. G. Cooper No. 16 Waggoner, 1,621-37 feet, 200 bbls. Culbertson Co. No. 81 Waggoner, 1,523 feet, dry. King Oil Co. No. 1 Stone B, 1,620-23 feet, 35 bbls.; No. 13 Waggoner H, 1,973-85 feet, 75 bbls. T. B. Medders No. 1 Foster, 1,923 feet, dry. Reno Oil Co. No. 17 Saunders, 1,885 feet, dry. Wilson & Ligon No. 5 Foster, 1,889 feet, dry.

Young County

J. W. Eagleston No. 2 M. L. Wall, 600 feet, dry. Estacado Oil Co. No. 1 Campbell, 900 feet, dry. Falls Production Co. No. 2 Seddon, 4,020-48 feet, 25 bbls. Holbrook & Wood No. 10 S. E. Watson, 630 feet, dry. Lee Kimmell & Co. No. 3 Prideaux, 664-70 feet, 5 bbls.; No. 5 Prideaux, 645-66 feet, 10 bbls. H. B. Madden No. 1 Graham, 751 feet, dry. K. R. March No. 1 Earnest, 1,112 feet, dry. Worth Oil Co. No. 17 Culler, 540 feet, dry.

Kansas Fields

(Continued from Page 215)

section 25-34-6, topped Chat at 3,030 feet and was dry and abandoned at 3,122 feet, total depth.

Edwards County

Stanolind Oil & Gas Co. No. 1 Donovan, C SE SE section 14-26-18w, Edwards County wildcat, topped anhydrite at 1,167 feet; Kansas City lime, 4,028 feet; water at 4,070-80 feet; hole full of water, 4,130-38 feet; showing of gas, 4,569 feet; fishing job at 4,570 feet; whipstock, 4,332 feet; drilled by; topped Viola lime, 4,642 feet; slight showing of oil, 4,643-45 feet; water, 4,660-65 feet; hole full of water, 4,840 feet; topped Simpson, 4,790 feet; Siliceous lime, 4,872 feet, and was dry and abandoned at 4,984 feet, total depth.

New Work Starting

Two new operations in Ellis County were reported. Carter Oil Co. No. 1 Staab, NE NE NW section 11-12-18w, Walter area, was moving in material; Watchorn Oil & Gas Co. No. 1 Brown, NW SE SE section 3-14-17w, Goetz area, spudded.

Windsor Oil Co. No. 1 Smith, NW SE NE section 22-25-1w, Sedgwick County, was rigging up. Roxana Drilling Co. and others No. 1 Woodman, SW NW SW section 26-26-1w, wildcat, was building rotary rig.

In Butler County, A. M. Landon and others No. 1 McCaig, NE NE SE section 13-28-6, wildcat southeast of the Kramer area, was a location.

Denman Brothers No. 2 Lewis, N half NE SE section 15-33-12, Monett area, Chautauqua County, topped Peru sand at 1,048 feet, and was drilling at 1,111 feet. Sinclair Prairie Oil Co. No. 35 Casement, SW SW SE section 32-33-11, Sedan area, was moving in material.

In Woodson County, Pure Oil Co. was rigging up machine at No. 8 Peek, NE SE SE section 20-23-14.

In Coffey County, Hinze and others No. 2 Hanna, SE NW SW section 12-23-14, was rigging up machine.

In Haskell County, Kuhn Brothers and others No. 1 Meredith, C SW section 10-30-33w, an old wildcat, was rigging up to deepen.

In the Hugoton field, Morton County, Kuhn Brothers No. 1 Walker, C NE section 33-34-39w, was rigging up rotary.

Louisiana-Arkansas Fields

(Continued from Page 211)

considerably higher than other wells in that region. Preparations are now being made to drill ahead to another sand of the same series expected about 50 feet deeper, at which casing may be set and thorough tests made.

Rapides Parish

Dr. R. D. Webb of Minden has begun drilling his 6,000-foot test in section 22-4n-2w, about 8 miles west of Alexandria, to be known as No. 1 Brasher. Sixteen-inch surface casing is to be set at 500 feet.

Webster Parish

The third well producing distillate from the lower marine section of Travis Peak at Cotton Valley, now designated as Bodcaw sand, was completed. Magnolia Petroleum Co. No. 5 Ira Cox, SE section 23-21-10, flowed 280 bbls. of high gravity distillate in 15 hours through three-sixteenths inch tubing choke with 3,500,000 feet of gas, tubing and casing pressure 2,740 pounds, total depth 8,115, plugged back from 8,635 feet.

United Gas No. 2 Davis, NW section 23-21-10, drilled the same Bodcaw sand from 8,258-8,298 feet and on drill stem test from 8,262-80 feet showed 20,000,000 feet of gas through three-eighths inch top and bottom choke, with large quantity of amber colored distillate, gravity 54.7. Drilling is continuing below 8,308 feet for a thorough exploration of the section.

United Gas No. 2 J. M. Mixon, SW section 22-21-10, topped the Bodcaw sand at 8,179 feet and was coring this horizon at 8,195 feet.

ARKANSAS

Dallas County

Walter Lowns No. 1 G. Atkinson, NE NW SE section 7-10-13, drilled sand showing only salt water on test, and hole has been temporarily abandoned at 2,763 feet.

Grant County

Wallace and Staples No. 1 W. F. Davis, SE SE NW section 23-6-15, was unsuccessful in fishing job at 2,580 feet, hole has been junked and rig skidded 150 feet southeast, where operators are rigging up for drilling of new hole.

Miller County

It is reliably reported that C. V. Lenz is negotiating with several major and indepedent concerns for the purchase of his approximately 1,000 acre block north of this discovery well 8 miles east of Texarkana. His discovery well, No. 7 Dale, section 24-15-26, has settled down to a steady daily pumping production of about 60 bbls. daily of high gravity oil.

About 5 miles west of this location Erwin and Leach and others have staked location for No. 1 Merchants and Planters Bank, NE SE SE section 18-15-26.

Thad Bryant, Jr. of Texarkana is completing plans for the drilling of a 6,000-foot Travis Peak test on his recently assembled 7,200-acre block in and surrounding section 20-18-28.

Union County

Penn-Ark Petroleum Co. No. 1 W. N. Raulston, NW NW SE section 12-17-14, northeastern flank of Rainbow field, cored sand 2,781-83 feet and from 2,970-83 feet, and at the lower depth oil shows were logged.

EAST TEXAS (Border Counties)

Harrison County

H. H. Alvord, Jr., of Shreveport, is planning to drill up his extensive holdings in the shallow Waskom gas field. On the southwestern flank of the field, five locations have been staked in the Martha Ann Flanagan track in the L. Momack Survey.

Panola County

Motex Oil Co. No. 1 J. M. Furrh, Alstone Survey on the northern flank of the Bethany gas field, is continuing its efforts to successfully set packer before swabbing and testing the Glen Rose horizon here.

MISSISSIPPI

Lamar County

Sun Oil Co. and E. B. Germany have staked location on what is presumed to be an advantageous position on newly discovered salt dome in section 28-4-15 in Lamar County. The test will be known as No. 1 K. Talley, and is about 3,000 feet southwest of their Scanlon and Semmes No. 1 which was abandoned at 4,024 feet after topping solid salt at 2,522 feet and remaining in same until point of abandonment.

Gulf Coast Fields

(Continued from Page 205)

Parish, Union Sulphur Co. No. 1 Mary McIver, section 14-9s-8w, cemented casing on bottom at 5,431 feet and on a production test made through perforated casing in 10 feet of sand topped at 5,421 feet, it showed as a high-pressure gas well with a slight spray of oil. This is the same sand from which two or three wells have tested, and all have shown for gas wells or small oil producers, accompanied by salt water.

Superior Oil Producing Co. No. 2 A. Savoie, the second well drilled in the Cankton field, St. Landry Parish, cemented 7-inch casing on bottom at 6,588 feet and after a six-hour period the well was still cleaning, showing oil, salt water and gas through an eighth-inch choke with tubing pressure 300 pounds and casing pressure 500 pounds. Casing was perforated with 8 holes at 5,855-88 feet. Location is in section 26-8s-3e.

Another 10,000-foot Test

Another 10,000-foot test was marked up for this area when Pure Oil Co. No. 1 State located on the Mallard Bay Prospect, Cameron Parish, reached a depth of 10,146 feet, at which depth the drill pipe became stuck and it is now being cut and pulled. Several electrical coring tests have been made, but the results are not known at this time. Location is in section 22-13s-3w.

One and a half miles east of the discovery well of the South Jennings field, Jefferson Davis Parish, H. M. Naylor No. 2 Johnson Bourdreaux in section 39-10s-3w is drilling in shale below 9,006 feet with no shows of oil or gas reported. At the China Prospect, Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Calcasieu National Bank is drilling in shale below 8,688 feet with no further showings reported. The well is said to have encountered an oil sand around 7,500 feet which will probably be tested unless deeper sands are found.

William Helis No. 1 City of New Orleans which proved up the Marchland Prospect in Lafourche Parish as a salt dome several weeks ago, is plugging back from 8,012 feet, the total depth and plans are to sidetrack the hole and redrill after considerable work had been done with geophones. Location is in section 19-23s-23e.

Pan American Production Co. No. 2 Laws, Charenton field, St. Mary Parish is being tested after making a screen setting in a sand section from 7,180-94 feet, the total depth. Seven-inch casing was cemented at 7,180 feet. East of the discovery well, the same company's No. 1 South Coast Corp. is still shut down at 6,934 feet due to high water.

Drilling Practice Committee

C. E. Reistle, Jr., Humble Oil & Refining Co., Houston, Tex., has been appointed national chairman for 1937 of the Topical Committee on Drilling Practice of the American Petroleum Institute's Division of Production.

The 1937 district chairmen are: California, H. A. Godde, Signal Oil & Gas Co., Los Angeles, Calif.; Eastern, Jack Gaddess, North Penn Gas Co., Port Allegany, Pa.; Mid-Continent, C. E. Wright, British American Oil Producing Co., Tulsa; Rocky Mountain, W. B. Emery, Ohio Oil Co., Casper, Wyo.; and southwestern, C. E. Sutton, Pure Oil Co., Houston, Tex.

J. E. Brantly, Drilling & Exploration Co., Los Angeles, is 1937 chairman of the Special Subcommittee on Drilling Contract Form.

California Field Report

PROSPECT OF NEW FIELD IN ARVIN AREA, KERN COUNTY

By
L. P. STOCKMAN

LOS ANGELES, Calif., Feb. 22.—General Petroleum Corp. No. 1 in the Arvin district of Kern County, section 26-31-29, several miles southeast of extreme outer limits of production in southern part of the Mountain View field, shows every indication of being an edge well in a new oil field. General Petroleum, and probably other operators, can be expected to undertake additional exploration in this district in the immediate future. No. 1 Arvin, bottomed at 7,462 feet but plugged back to 7,395 feet, was brought in pumping at the rate of 250 bbls. of 37.5 gavity oil, cutting 51 per cent, but declined two days later to 80 bbls. per day cutting 28 per cent. The Bear Mountain Oil Co. has staked location for a test to be drilled in section 21-31-30, a few miles east of the Arvin wildcat, and drilling material is expected to be on ground within 10 days.

El Segundo

In the El Segundo field of Los Angeles Basin, Richfield Oil Co. should finish its No. 2 El Segundo within another week, as the company is coring ahead following the landing of 7-inch casing at 7,243 feet. This well is running higher structurally than wells previously finished to the northwest, but Union Oil Co. No. 1 Security, located southeast of Richfield Oil Co. No. 2 El Segundo, is running lower structurally. The Union, at 7,291 feet, had not yet logged the Nodular shale and this project, the most southerly drilling well in the field at the present time, does not look any too promising, although deeper drilling may change the situation. The Texas Co. No. 2-1 Johnson, the most easterly well being drilled in the El Segundo field, does not look promising at 7,400 feet, although it may be completed as a commercial producer as the basement, Schist, has not yet been hit. Ohio Oil Co. is expected to complete No. 2 Gough, in the extreme northern part of the field, within the next few days as the company cored the top of the Schist at 7,325 feet and concluded drilling operations in the basement at 7,341 feet. The company cored 23 feet of oil sand above the Schist and has cemented the water string. Republic Petroleum, discoverer of the El Segundo field, has just passed the 7,200-foot level in No. 3 El Segundo and has started coring for the established markers.

Lawndale

Wood-Callahan Oil Co. has been assigned the 40-acre Peck lease in the Lawndale field of Los Angeles Basin and preparations are under way to deepen No. 10 Peck to the Schist in order to determine production possibilities of the formation immediately overlying the Schist.

Wilmington

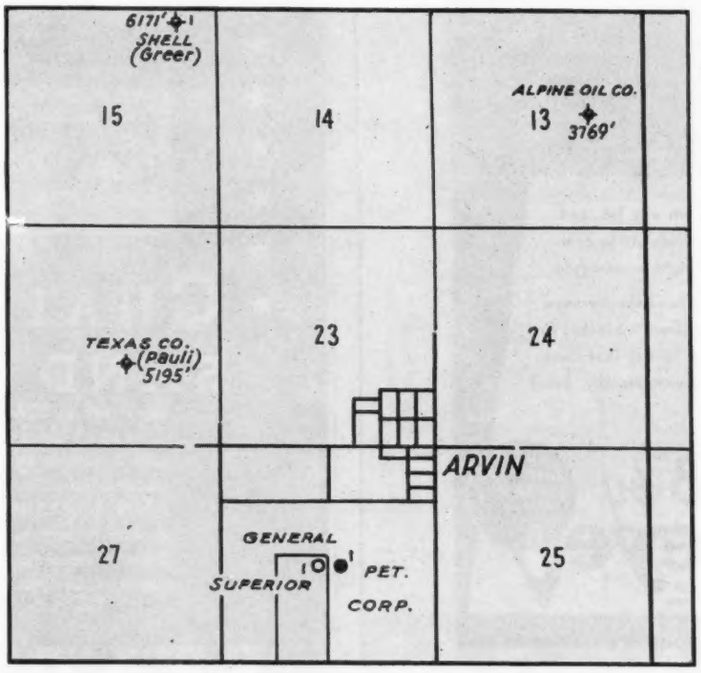
In the Wilmington field, General Petroleum Corp. recompleted No. 1 Patten flowing 326 bbls. of 19.9 gravity oil per day after redrilling and cleaning out to 3,600 feet. No. 1 Patten is bottomed at 3,651 feet and was finished with a 6⅝-inch liner landed at 3,600 feet and cemented through perforations at 3,142 feet. The casing program for new wells in the Wilmington field calls for the landing of either 18-inch or 20-inch surface pipe between 100 and 180 feet. A string of 8⅝-inch is subsequently landed and cemented below the first zone and holes finished with a 6⅝-inch liner which is cemented through perforations immediately on top of the second productive horizon.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	February 11		February 4			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic:						
Diesel and gas oil	105,918	15,131	.....	.....	176,926	.....
Gasoline	.....	.....	.....	.....	79,106	637,915
Kerosene	.....	.....	.....	.....	.....	228,486
Foreign exports:						
Crude oil	91,752	13,107	92,810	13,259	752,847	706,596
Fuel oil	150,640	21,500	45,400	6,486	1,501,628	1,265,086
Diesel and gas oil	13,148	1,878	9,939	7,986	1,022,362	318,946
Gasoline	87,990	12,570	162,271	23,182	596,229	597,287
Kerosene	57,268	8,181	109,063	15,580	459,317	23,406
Coastwise-domestic:						
Crude oil	144,130	20,590	64,707	9,244	793,489	554,557
Fuel oil	483,471	69,067	357,358	51,051	1,661,667	1,031,495
Diesel and gas oil	13,149	1,878	9,939	1,420	75,859	232,768
Gasoline	342,078	48,868	140,920	20,131	1,433,996	1,417,342
Kerosene	5,835	834	.....	.....	8,034	53,698

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	75,895	.....
Foreign exports:						
Crude oil	143,889	20,556	.....	.....	388,489	192,079
Fuel oil	60,147	8,592	.....	.....	188,107	159,220
Diesel and gas oil	.....	.....	100,364	14,338	322,233	.....
Gasoline	251,594	35,942	21,812	3,116	765,563	453,065
Kerosene	49,135	7,019	.....	.....	115,972	26,678
Lubricants	80,927	11,561	.....	.....	106,280	14,343
Coastwise-domestic:						
Fuel oil	389,557	55,651	.....	.....	813,159	682,666
Diesel and gas oil	.....	.....	.....	.....	58,124	76,898
Gasoline	112,028	16,004	66,151	9,450	537,236	469,044
Kerosene	.....	.....	.....	.....	3,367	15,699



General Petroleum Corp. finished a small well in section 26-31s-29e, near Arvin, in Kern County, several miles southeast of production, which may have opened up a new oil field

Grapevine-Tejon

Reserve Oil & Gas Co. will soon test its No. 33-3, a wildcat, in the Grapevine-Tejon district in section 33-11-19. The company is installing gas trap and flow lines in the expectation of completing the wildcat as a commercial producer. On a recent preliminary production test, the well was brought in flowing approximately 10,000,000 feet of gas and a spray of extremely light gravity oil. After being shut in for a few days, it was again opened up and flowed at the rate of 5,000,000 feet of natural gas per day before being shut in. The shut-in pressure at present is 1,570 pounds on the tubing and 1,700 pounds pounds on the 8⅝-inch casing. This test is bottomed at 4,431 feet and was finished with a 6⅝-inch liner including 49 feet of perforated and 4,287 feet of 2½-inch tubing. The company's engineers are of the opinion that satisfactory results will be obtained by passing the flow of oil and gas through gas traps.

Ten Section

Shell Oil Co. completed its third well in the Ten Section field of Kern County a few days ago, but killed it in order to undertake some necessary remedial work. Shell's new producer was No. 34-29 in section 29-30-26 and it was brought in flowing 2,350 bbls. of 33.8 gravity oil and 2,500,000 feet of gas per day. No. 34-29, bottomed at 8,477 feet but plugged back to 8,420 feet, failed to clean up satisfactorily due possibly to bottom water and it is the present intention of the company to plug back to 8,400 feet. Shell Oil Co.'s crews cemented No. 78-29 at 7,855 feet and started rig construction for No. 23-30, a new well to be drilled in section 30-30-26. Standard Oil Co. recemented No. 9-1 K.C.L., an outpost in section 34-30-26, after plugging back the hole from 8,915 feet to 8,204 feet.

Wasco-Famosa

Continental Oil Co. has focused the attention of operators on the Wasco district of Kern County due to increasing showings of oil and gas on the ditch in No. 1-A Kern County Land, a wildcat in section 8-27-24. The company temporarily lost circulation at 9,545 feet but subsequently regained it and present plans call for the immediate landing of a string of casing. This wildcat showed oil and gas higher up in the hole in rocks of Pliocene age but an exhaustive test proved unsuccessful from a production standpoint.

Midway-Sunset

Union Oil Co. completed an excellent well in the Midway-Sunset field of Kern County when No. 6 Keene in section 22-32-23 was brought in pumping 580 bbls. of relatively clean 16.7 gravity oil per day from 2,048 feet. Upon completion of this new producer the crew was moved to No. 5 Williams. General Petroleum Corp.'s No. 32-6 in section 32-32-24 proved somewhat of a disappointment upon completion at 3,120 feet as it was

(Continued on Page 238)

Central West

Operations in Central Ohio, Kentucky, Illinois, Indiana

By GEORGE A. WHITNEY

FINDLAY, Ohio, Feb. 22. — The largest producer completed in the Central Ohio field in the past week was Hulse-Kuntz, Inc., No. 1 Lovey Stone, in section 10, Jackson Township, Knox County. This producer was drilled through the Clinton sand at 3,141-93 feet and made 90 bbls. the first 24 hours after a shot. In section 17, Pike Township, J. B. Reed & Co. No. 1 Alva Robinson was completed below the sand at 718-28 feet and gauged at the rate of 115,000 feet of gas per day, one hour after a shot. In section 4, Union Township, H. E. Perkins is moving a rig on location for a test on the William Durbin farm. Ohio Fuel Gas Co. completed a commercial gas well on the Sylvia Flack property in section 17, Butler Township. This gasser, which is the second test drilled on this lease, was completed below the second Clinton sand at 2,969-80 feet. In section 18 the same company has tools in the No. 1 David Cornell, to deepen it to the Clinton sand.

In Coshocton County, section 17, Perry Township, Preston Oil Co. No. 3 W. A. Little made 74 bbls. the first 24 hours after a shot. Pay was struck in the Clinton sand at 3,137-64 feet. In section 14 the same company has staked a location for No. 4 on the A. Vanwinkle lease.

East Ohio Gas Co. No. 1 K. W. Bender, in section 5, Jackson Township, Stark County, is being drilled in and No. 2 on this farm gauged 2,304,000 feet of gas naturally from the Clinton sand at 4,204-29 feet. The same operators also completed No. 1 Willowdale Club, in section 4, same township, as a gas well gauging 1,332,000 feet of gas a day from the same sand at 4,240-56 feet. In section 21, Plain Township, Lyons & Co. No. 1 J. Fasnacht, was drilled through the Clinton sand at 4,628-48 feet and made 741,000 feet of gas naturally and will be shot. In the same section, H. W. Hoover is building a rig for No. 3 on his own property.

In Portage County, section 25, Streetsburg Township, Wittmer Oil & Gas Co. No. 1 Scott Patterson was drilled through Clinton sand at 4,025-55 feet and was plugged after making 12,000 feet of gas naturally. There was no showing of oil in this test. In section 13, Palmyra Township, Cashdollar & Co. are completing the test on the J. T. Henderson farm.

East Ohio Gas Co. No. 1 Joseph Surman, in tract 3, Olmstead Township, Cuyahoga County, was completed in the second Clinton sand at 2,655-63 feet, and gauged 1,101,000 feet of gas naturally. The volume of gas in this test blew down to 200,000 feet before it was shot and was increased to 400,000 feet by the shot. In Cleveland Township, L. F. McGrath is completing a test on the Bradford & Averill property.

In Lorain County, section 10, Avon Township, William Dempsey No. 2 Nicholas Miller made a showing of 500,000 feet of gas in the Clinton at 2,279-91 feet and is fishing for tubing. In Lot 62, Columbia Township, Snyder & Wiles are completing a test on the Charles Osborne farm.

Scott & Co. No. 2 William Weakly, in section 1, Hopewell Township, Licking County, had a production of 10 bbls. the first 24 hours after a shot. In section 6, Perry Township, Armbruster & Stricker No. 6 Sarah Patton was completed below the sand at 648-52 feet and had an initial production of 7 bbls. after a shot. In section 1, Licking Township, Wehrle Gas Co. has started operations on a test on the Harvey Orr lease.

In Hocking County, section 6, Ward Township, Preston Oil Co. has staked a location for No. 146 on the Sunday Creek Coal Co. property.

Southern Ohio Development Co. completed a test on the John Myers property, in section 29, Greenfield Township, Gallia County. This test was drilled through the Clinton formation at 3,002-18 feet and was abandoned as a failure after making only water in the sand.

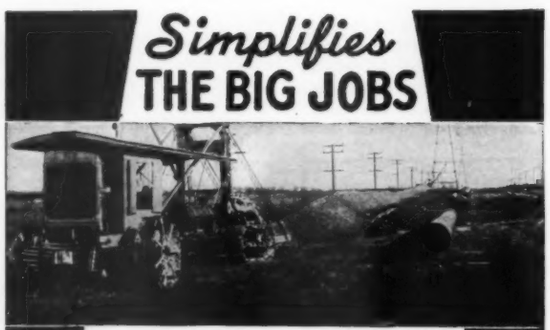
In Fairfield County, section 4, Pleasant Township, City Natural Gas Works is building a rig for No. 5 on the Marion Watson lease.

In Morgan County, location 1,097, Windsor Township, Burt & Son No. 8 Susan Minor made a showing of oil in the first Cow Run sand at 412-52 feet, and is pumping one-quarter of a barrel a day after being shot with 500 pounds of gelatine. The same operators have rigging up for the No. 9 on this farm. In section 1, Homer Township, Choguill & Co. are moving a machine on location on the Onie Linscott farm for No. 24.

In Medina County, section 8, Liverpool Township, Obermiller Brothers, are drilling below 1,750 feet in the second test on the William Szoke farm.

Leeper & Co. No. 2 Hattie Dodds, in section 35, Rome Township, Athens County, was completed below the first Cow Run sand at 530-40 feet and has been abandoned as a failure. In section 16, same township, Gibson & Co. No. 3 Fred Laughlinz was drilled

(Continued on Page 238)



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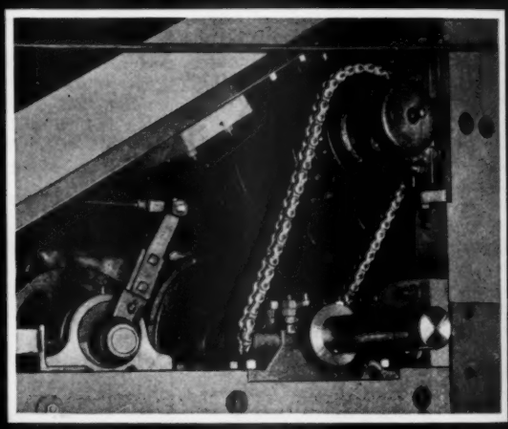

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STAR DRILLING MACHINES

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Feb. 20.—Deliveries of naphtha and crude from the Turner Valley field to the Calgary refineries in January totaled 101,856 bbls. compared with 97,117 bbls. in December. Deliveries to Imperial Oil Refineries, Ltd., for January totaled 70,771 bbls., including 5,140 bbls. of clear naphtha, 48,469 bbls. of discolored naphtha and 17,172 bbls. of crude. Deliveries to Imperial in December amounted to 65,227 bbls., of which 7,821 bbls. were crude oil, indicating that the January gain was entirely in the latter classification. Deliveries to the British American Oil Co. in January totaled 31,085 bbls., including 5,896 bbls. of naphtha and 25,189 bbls. of crude oil. Crude sales to Imperial Oil Refineries, Ltd., were increased considerably by the bringing in of Foundation Royalties No. 1 and Sterling Pacific No. 3, though neither well was operated to capacity during the month. Sales of crude from B. & B. Royalties No. 1 to British American Oil Co. are expected to increase the February total to a new record figure.

Dalhousie Gets Lime

In the Turner Valley field, Dalhousie Oil Co. No. 8, LSD 6, section 30-19-2w5, located on the west flank of the old central field, got the Madison limestone at 6,178 feet, and is cementing in the top of the lime below 6,185 feet. This is probably the most important development since Turner Valley Royalties No. 1 crude producer was brought in; since it proves the lime formation on the west flank a distance of 6 miles north and 2 miles west of that producer, and will open extensive territory west of the central field. It got the Madison at 118 feet less depth than Turner Valley Royalties No. 1 and 53 feet higher than Sterling Pacific No. 3, which is a mile nearer. It is expected to go to around 400 feet in the lime to get production.

Dalhousie No. 8 is the only active test on the west flank north of the Sterling Pacific lease in section 33-18-2w5; though a number of locations have been made and extensive acreage leased since drilling started. The Dalhousie company is controlled by Royalite Oil Co., subsidiary of Imperial Oil, Ltd. It holds 1,440 acres in Turner Valley, including some large blocks on the west flank. Of seven wells completed on its holdings, three have been abandoned, and production of the others in December aggregated 566 bbls. Acreage adjacent to No. 8 well is held by Okalta Oils, Calgary & Edmonton Corp., Southwest Petroleum Co., Advance Oil Co., United Oils, Kermac Petroleums, Lethbridge Petroleums, Anaconda Oil Co. and Calgary Brokers, Ltd.

B. & B. Producer

In section 28-18-2w5, B. & B. Co. No. 1, LSD 12, recently brought in at 6,608 feet with a flush production around 2,100 bbls. a day, has completed a series of back pressure tests to determine the most satisfactory oil-gas ratio. With a back pressure between 75 and 90 pounds, the gas waste was reduced from around 5,000,000 to 2,500,000 feet a day, with the well flowing between 1,300 and 1,350 bbls. of crude. The well will be operated on this basis. A settled production of 1,200 bbls. a day is anticipated. The gravity has increased to 48 degrees, worth $1.79 a barrel. Production is being taken by British American Oil Co.

Foundation Royalties No. 1, LSD 5, section 21-18-2w5, bottoming in the lime at 6,456 feet, has cleaned out after drilling up lost bailer, and is testing production. Gas was forced down the tubing to clear the hole. Production with the bailer in the hole was around 342 bbls. a day, which will likely be increased.

Tests in the Lime

In section 21-18-2w5, West Side Royalties No. 1, LSD 3, is deepening more than 134 feet in the lime below 6,074 feet depth, after a fishing job. This is the farthest south test on the west flank to get the Madison, and is expected to be the next completion. Newfold Royalties No. 1, LSD 11, same section, is deepening from 5,832 feet where casing was cemented after getting the Madison at 5,810 feet.

West Side Drilling

In section 5-19-2w5, Mercury Royalties No. 1, LSD 8, is below 1,200 feet. Mercury Oils No. 8, LSD 3, section 4-19-2w5, has spudded and is drilling below 140 feet.

In section 33-18-2w5, Royalite Oil Co. No. 4 Sterling-Pacific, LSD 4, offsetting Turner Valley Royalties No. 1 to the north, is below 6,570 feet and not in the lime. It is logging deeper than Turner Valley No. 1, which got the lime at 6,396 feet. No. 5 Sterling Pacific, LSD 12, same section, is rigging.

In section 32-18-2w5, British Trans-Canada Oils, Ltd., is financing for a test on the K. M. Leach acreage in LSD 10. Location is southwest of No. 3 Sterling Pacific, and north and about half a mile west of Turner Valley Royalties No. 1.

In section 28-18-2w5, Richland Royalties No. 1, NE LSD 12, located be-

(Continued on Page 238)

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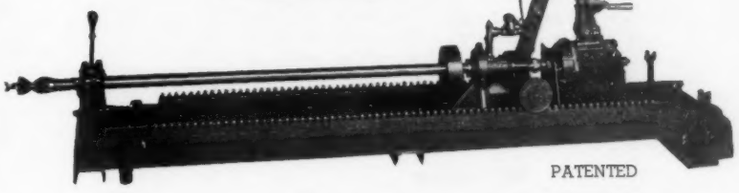

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HYDRAUGER
"The Mechanical Gopher"

East and East Central Texas

By L. E. BREDBERG

INCREASED WORK IN TALCO; VAN'S ALLOWABLE IS RAISED

DALLAS, Tex., Feb. 22.—The Talco field in northwestern Titus and northeastern Franklin counties is becoming more active. Fifteen locations were staked in the past week for new tests. Only one location was staked in the Sulphur Bluff field, 18 miles to the southwest in Hopkins County, but that field is also due for an expanded drilling campaign within the next few months. Four wells were completed in the Talco field last week, but none in the Sulphur Bluff field.

The Talco field was given a half-mile eastern extension when Humble Oil & Refining Co. No. 1 Pan-American Life Insurance Co., in the A. J. Fry Survey, came in making 154 bbls. of oil in 24 hours, flowing through one-quarter inch choke. It topped the sand at 4,322 feet and was completed at that depth for one of the best wells in the field, proving up considerable more territory in the east end of the field.

The same company staked an interesting location in the southeast corner of the Mrs. D. Reed 78-acre tract, in the J. Brantley Survey, about one-quarter of a mile northwest of a dry hole, and about a half mile southeast of the first producing part of the field over the line in Franklin County.

The American Liberty Oil Co. is erecting a 12-car loading rack on the Paris & Mount Pleasant Railroad at Talco near its 55,000-bbl. steel storage tank. The company has a pipe line running into the field from Sulphur Bluff, and will ship out part of the oil it purchases, via this loading rack.

The Constantin Refining Co., headed by C. J. Constantin of Talco, M. Constantin of Tulsa and R. F. Constantin of Dallas, which is taking oil from American Liberty Oil Co. lease in the Talco field for its small refinery at that place, is changing the name of this plant to the Paluxy Asphalt Co.

The Sulphur Bluff field in Hopkins County may be given another outlet in the near future as a crew has been making a survey for right of way from the field to Weaver, about 10 miles due south on the Cotton Belt railroad. A loading rack may be built at this point with a line constructed to connect the field and rack, from which point oil will be shipped out via tankcar.

There are now 18 oil wells in the Sulphur Bluff field with seven drilling, one of which is being completed by Shell Petroleum Corp.

Wildcatting

No wildcat locations were reported for the district this week, but the General Crude Oil Co. No. 1 Braly Estate, in the J. Thomas Survey, 4 miles east of Mount Selman, in Cherokee County, is being abandoned at 4,275 feet in salt water sand. It is the second test drilled by the company in that area.

The Humble Oil & Refining Co. is planning on drilling a Trinity test on the northeast flank of the Van field and Van structure in Van Zandt County. It will be in the William Daniel Survey, adjoining Woodbine sand production. This will be the second deep test drilling on the east flank. The American Liberty Oil Co. is now drilling on the J. A. Freeman lands in the John Walling Survey. One dry Trinity test was drilled on the northwest flank of the field several years ago by the Pure Oil Co.

Morrow & Scarborough of Dallas have let drilling contract to Frank Shackelford for a wildcat on the L. C. Fuller lands, in the George Self Survey, about 4 miles southeast of Bonham in Fannin County.

The American Liberty Oil Co. of Dallas is reported to have purchased the Invincible Oil Co.'s properties in the Kilgore area, in the East Texas field, including seven leases containing 41 wells. The Magnolia Pipe Line Co. is connected to these wells, but may lose the connections as the American Liberty Pipe Line Co., sister company to the American Liberty Oil Co., has a pipe line from the field to the Gulf Coast.

The American Liberty Pipe Line Co. has also taken over the Regent Pipe Line Co. a gathering line system in the field, including 80 wells to which it was connected.

Van Allowable Raised

The daily allowable of the Van field in Van Zandt County has been raised 2,500 bbls. daily by the Railroad Commission, giving the field a total allowable of 36,521 bbls. The increase resulted from an affidavit that the Pure Oil Co. had depleted its stocks of [illegible]0,000 bbls. since January, and that it would be necessary to close the Smith's Bluff refinery unless there was some relief. This is another specific example of the tight crude situation in Texas. Several companies asked for increases in allowables from other fields in the state at the last Railroad Commission hearing.

COMPLETIONS IN EAST CENTRAL TEXAS

Anderson County

H. L. Hunt No. 3 Robinson, 5,322-45 feet, 61 bbls. in 24 hours through 3/32-inch choke.

Titus County

H. B. Hinton and others No. 7 Hargrove, 4,340 feet, 10 bbls. per hour. Humble Oil & Refining Co. No. 25 King-Hughes, 4,331 feet, 338 bbls. in 24 hours on pump; No. 28 King-Hughes, 4,318 feet, 409 bbls. in 24 hours on pump. Alex McCutchin No. 1 Burke, 4,345 feet, 15 bbls. per hour.

EAST TEXAS COMPLETIONS

Gregg County

Arkansas Fuel Co. No. 11 Allison, 3,578-3,603 feet, 28 bbls. in 15 minutes. Magnolia Petroleum Co. No. 3 Kinsel, 3,630-41 feet, 75 bbls. per hour. Red Star Oil Co. No. 5 Christian, 3,597-3,622 feet, 60 bbls. per hour. Shell Petroleum Corp. No. 25 King, 3,540-97 feet, 22 bbls. in 15 minutes. Sinclair Prairie Oil Co. No. 16 York, 3,581-82 feet, 15 bbls. in 30 minutes; No. 16-A Aiken, 3,583-3,630 feet, 30 bbls. in 30 minutes. Stanolind Oil & Gas Co. No. 12 Cox-Hamon, 3,451-80 feet, 38 bbls. per hour; No. 8 Dollihite, 3,630-75 feet, 60 bbls. per hour; No. 18 Hopkins, 3,496-3,575 feet, 72 bbls. per hour; No. 19 Hopkins, 3,519-3,603 feet, 61 bbls. per hour. Sun Oil Co. No. 36 Haynes, 3,575-3,608 feet, 66 bbls. per hour. Tide Water Associated No. 40 Lake Devernia, 3,503-43 feet, 11 bbls. in 10 minutes; No. 17 Bell, 3,691-3,740 feet, 5 bbls. in 10 minutes. Gulf Oil Corp. No. 93 Hilburn, 3,518-44 feet, 60 bbls. per hour. H. & F. Corp. No. 10 Crews, 3,730-31 feet, 30 bbls. per hour; No. 12 Crews, 3,734-35 feet, 25 bbls. per hour. Maxel Oil Co. No. 2 Pinter, 3,439-56 feet, 20 bbls. in six hours on pump. Shell Petroleum Corp. No. 63 Watson, 3,569-3,623 feet, 37 bbls. in 30 minutes. Sun Oil Co. No. 19 Reese, 3,699-3,700 feet, 23 bbls. per hour. F. L. Thompson No. 9 Hilburn, 3,614-15 feet, 20 bbls. in 20 minutes.

Rusk County

Gulf Oil Corp. No. 22-A Christian, 3,610-50 feet, 40 bbls. per hour; No. 7-A Keeling, 3,766-3,809 feet, 20 bbls. per hour through three-quarters inch choke. R. H. Dearing & Son No. 11 Finney, 3,621-85 feet, 20 bbls. in four hours on pump. Humble Oil & Refining Co. No. 47-A Plowman, 3,680-3,771 feet, 60 bbls. per hour; No. 33 Wooley, 3,664-3,762 feet, 70 bbls. per hour. Hunt Production Co. No. 18 Bradford, 3,545-3,630 feet, 22 bbls. in three hours. P. Lake, Inc., No. 9 Dickerson, 3,588-3,630 feet, 20 bbls. in four hours on pump. Ohio Oil Co. No. 23 DeGuerin, 3,607-65 feet, 50 bbls. per hour. Stanolind and Pure Oil Co. No. 71 Siler, 3,693-97 feet, 21 bbls. per hour. Tide Water Associated No. 22 Pinkston, 3,765-3,804 feet, 60 bbls. per hour. Hurricane Oil Co. No. 5 Alexander, 3,615-17 feet, 27 bbls. per hour. Magnolia Petroleum Co. No. 10 Jernigan, 3,581-3,645 feet, 20 bbls. in 30 minutes.

Smith County

H. Hanbury No. 2 Cross, 3,709-3,710 feet, 30 bbls. in 40 minutes. Georgian Oil Corp. No. 4 Cross, 3,676-77 feet, 21 bbls. per hour. J. C. Hawkin, 3,768-69 feet, 15 bbls. in 30 minutes through one-quarter inch choke. Sinclair Prairie Oil Co. No. 12 Patterson, 3,680-81 feet, 17 bbls. in 15 minutes. Sun Oil Co. No. 6 Seale, 3,720-24 feet, 20 bbls. in two hours on pump, 5 per cent water.

Upshur County

G. P. Mitcham No. 4 Christian, 3,696-3,708 feet, 60 bbls. per hour. Rancho Oil Co. No. 14 Edward, 3,598-3,617 feet, 65 bbls. per hour. Southland and United East & West Oil Co. No. 39 O'Byrne, 3,716-19 feet, 25 bbls. per hour. Creighton Drilling Co. No. 3 Hargraves, 3,726-27 feet, 25 bbls. per hour; No. 4 Hargraves, 3,739-40 feet, 20 bbls. per hour. Gilcrease Oil Co. No. 9 Free, 3,635-70 feet, 31 bbls. in 15 minutes. Humble Oil & Refining Co. No. 36 Smith, 3,665-3,716 feet, 75 bbls. per hour; No. 11 Smith, 3,630-88 feet, 61 bbls. per hour. B. F. Phillips No. 2 Everett, 3,613 feet, plugged back to 3,626 feet, 10 bbls. and 10 bbls. water. Southland and United East & West Oil Co. No. 40 O'Byrne, 3,734-36 feet, 15 bbls. per hour.

Southwest Texas Fields

(Continued from Page 221)

Flour Bluff

The Humble Oil & Refining Co., Barnsdall Oil Co. and Flour Bluff Corp. have six wells drilling in the Flour Bluff field, and two good oil wells were completed during the week to further extend the producing limits of the field. Drilling in the shallow water of Laguna Madre on the east edge of the field is expected to begin shortly as production is brought up to the edge of the lagoon.

An important strike may result from the operations of Lockhart Brothers No. 1 Elliff, in the new Sullivan area near Agua Dulce in western Nueces County. The test, 1 mile south of the Texon Drilling Co. No. 1 Elliff, discovery well of the field, cored sand and shale at 6,863-67 feet with an odor of oil and gas. Operators were swabbing at latest reports. The Texon No. 1 Elliff, as well as the No. 2 Sevier are blowing through a number of craters and burning as operators drill No. 2-B Sevier in an effort to kill No. 2. The area has what is considered as one of the worst blowouts in the history of the entire district.

In the Rio Grande Valley, activity in the areas slated for deep tests, lagged. In the La Blanca field of Hidalgo County, the Pantana Oil Co. No. 1 McDougal and No. 1 Engleman are producing distillate at the rate of 82 bbls. and 60 bbls. per day respectively. The Sterling Oil & Refining Co. No. 1 Engleman is approaching the field horizon and will show important development during the coming week.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Barnsdall-Rio Grande, No. 19 Elwood, Santa Barbara	15- 4-29	3,294	rigging up
Signal Oil & Gas, No. 98-9 Elwood, Santa Barbara Co.	tideland	2,784	sd. sh. drlg.
Bush Oil Co., No. 4 Santa Maria, Santa Barbara Co.	30-10-33	1,675	sd. sh. drlg.
Shaffer, W. D., No. 1 Santa Maria, Santa Barbara Co.	9- 9-33	5,003	hd. sh. drlg.
Macrate, A. N., No. 2 Santa Maria, Santa Barbara Co.	26-10-34	3,975	P.B. 3,900
Echo Oil Co., No. 1 Santa Maria, Santa Barbara Co.	23-10-34	3,449	cleaning out
Union Oil Co., No. 2 Santa Maria, Santa Barbara Co.	30-10-33	2,880	sd. sh. drlg.
Union Oil Co., No. 11 Orcutt, Santa Barbara Co.	26- 9-34	4,083	test. W.S.O.
Union Oil Co., No. 17 Orcutt, Santa Barbara Co.	26- 9-34	3,215	sd. sh. drlg.
Valley Oil Co., No. 1 Casmalia, Santa Barbara Co. ...	20- 9-34	947	sd. sh. drlg.
Barnsdall Oil Co., No. 9 Gato Ridge, Santa Barbara Co.	9- 8-32	1,772	sd. sh. drlg.
Field Gasoline Corp., No. 1 Gato Ridge, Santa Barbara	4- 8-32	2,812	rig. to pump
Stewart-Carter Oil, No. 1 Gato Ridge, Santa Barbara	4- 8-32	2,311	cmtd. 2,160
Moore, Inc., No. 1 Santa Maria, Santa Barbara Co. ...	25-10-35	8,021	cleaning out
Nine Springs Oil Co., No. 1 Los Olivos, Santa Barbara	9- 7-30	3,080	cleaning out
Dietzman, J., No. 1 Carpenteria, Santa Barbara Co.	8- 4-25	1,025	idle
Fisher, Dan, No. 1 Cuyama, Santa Barbara Co.	28-11-28	640	sd. sh. drlg.
Texas Co., No. 132 Shiells, Ventura Co.	4- 3-19	2,287	sd. sh. drlg.
Calumet Oil Co., No. 16 Shiells, Ventura Co.	3- 3-19	3,160	sd. sh. drlg.
Merchants Pet. Co., No. 7 Sespe, Ventura Co.	1- 4-20	630	sd. sh. drlg.
Condor Oil Co., No. 1 Sespe, Ventura Co.	6- 4-19	1,486	cleaning out
Speik Oil Co., No. 2 Sespe, Ventura Co.	33- 5-19	1,790	sd. sh. drlg.
Colima Oil Co., No. 2 Sespe, Ventura Co.	25- 5-19	999	cmtd. 972
Oil Ridge Oil Co., Ho. 1 Hopper Canyon, Ventura Co.	6- 4-18	2,774	idle
Bolsa Chica Oil Co., No. 4 Temescal, Ventura Co. ...	4- 4-18	4,584	P.B. 3,560
Bolsa Chica Oil Co., No. 5 Temescal, Ventura Co. ...	5- 4-18	731	cmtd. 642
Pacific Western Oil Co., No. 10 Temescal, Ventura Co.	3- 4-18	1,520	sd. sh. drlg.
Associated Oil Co., No. 1 Wiley Canyon, Ventura Co.	6- 3-18	5,287	dry; abd.
St. Louis Oil Co., No. 3 Ojai, Ventura Co	13- 4-24	480	hd. sd. drlg.
Vaca Oil Co., No. 1 Oxnard, Ventura Co.	6- 1-21	2,822	pump. test
Continental Oil Co., No. 1 Red Mountain, Ventura Co.	7- 3-23	5,264	fish. D.P.
General Pet. Corp., No. 1 Padre Canyon, Ventura Co.	15- 3-24	5,403	pump. 250 b.d.
C. C. M. Oil Co., No. 2 Padre Canyon, Ventura Co. ...	23- 3-24	6,465	fish. D.P.
Honolulu Oil Corp., No. 1 South Mountain, Ventura Co.	23- 3-21	6,744	will cmt.
Calco Pet. Corp., No. 4 South Mountain, Ventura Co.	17- 3-20	3,350	O.S. drlg.
Associated Oil Co., No. 27 Hartman, Ventura, Ventura	22- 3-23	5,897	sd. sh. drlg.
Associated Oil Co., No. 25 V.L.W., Ventura, Ventura	23- 3-23	7,055	redrlg. 7,320
Associated Oil Co., No. 28 Lloyd, Ventura, Ventura	27- 3-23	5,951	sd. sh. drlg.
Associated Oil Co., No. 137 Lloyd, Ventura, Ventura	27- 3-23	1,731	sd. sh. drlg.
Shell Oil Co., No. 89 Taylor, Ventura, Ventura Co. ..	30- 3-23	7,025	hd. sd. drlg.
General Pet. Corp., No. 34 Gosnell, Ventura, Ventura	22- 3-23	7,563	redrlg. 7,121
General Pet. Corp., No. 17 Barnard, Ventura, Ventura	23- 3-23	6,531	hd. sh. drlg.
Continental Oil Co., No. 6 San Miguelito, Ventura ..	24- 3-24	5,654	O.S. drlg.
C. C. M. Oil Co., No. 13-B Rincon, Ventura Co.	8- 3-24	951	sd. sh. drlg.
Surf Oil Co., No. 4 S. P., Rincon, Ventura Co.	8- 3-24	3,865	recmtd. 3,780
Lube Oil Co., No. 1 Devils Den, Kern Co.	2-25-18	3,450	br. sh. drlg.
Den Pet. Co., No. 1 Devils Den, Kern Co.	20-25-19	3,101	cleaning out
Associated Oil Co., No. 10-A-3 Lost Hills, Kern	11-26-20	1,426	pump. 150 b.d.
Texas Co., No. 1 Theta, Lost Hills, Kern Co.	11-26-20	2,037	P.B. 1,852
Standard Oil Co., No. 3 United, Lost Hills, Kern Co.	2-26-20	1,050	sd. sh. drlg.
Welport Oil Co., No. 16 McKittrick, Kern Co.	26-29-21	1,200	pump. 120 b.d.
Peters Royalty Corp., No. 2 McKittrick, Kern Co.	32-29-22	1,698	O.S. drlg.
Continental Oil Co., No. 1 Wasco, Kern Co.	8-27-24	9,545	hd. sh. drlg.
Belridge Oil Co., No. 14-35 North Belridge, Kern Co.	35-27-20	7,875	cmtd. 7,875
Belridge Oil Co., No. 62-27 North Belridge, Kern Co.	27-27-20	5,440	br. sh. drlg.
Belridge Oil Co., No. 21-1 North Belridge, Kern Co..	1-28-20	3,102	sd. sh. drlg.
Honolulu Oil Corp., No. 68 Kern Front, Kern Co. ...	8-28-27	1,851	sd. sh. drlg.
M. H. Whittier Co., No. 3 Kern Front, Kern Co.	16-28-27	2,848	cleaning out
Cedar Oil Co., No. 1 Gill, Kern Front, Kern Co.	8-28-27	2,989	bailing
Calif. Star Oil Co., No. 7-80 Kern Front, Kern Co. ...	22-28-27	2,654	rig. to pump
Seakayden Oil Co., No. 3 Kern Front, Kern Co.	17-28-27	2,865	pump. test
Standard Oil Co., No. 3 Ward, Kern Front, Kern Co.	24-28-27	1,995	O.S. drlg.
Standard Oil Co., No. 3-9 Kern Front, Kern Co.	9-28-27	2,845	pump. 190 b.d.
Standard Oil Co., No. 4-9 Kern Front, Kern Co.	9-28-27	2,785	sd. sh. drlg.
Pioneer Oil Co., No. 1 Kern Front, Kern Co.	18-28-28	1,560	sd. sh. drlg.
National Oil Co., No. 4 Gates, Kern Front, Kern Co.	2-28-29	1,820	dry; abd.
McManus, Thomas, No. 2 Kern River, Kern Co.	2-29-28	410	rig. to pump
Golden Bear Oil Co., No. 5 Premier, Kern Co.	32-27-27	2,678	sd. sh. drlg.
Bojaki Oil Co., No. 1 Premier, Kern Co.	28-27-27	1,500	cleaning out
Framac Oil Co., No. 3 Premier, Kern Co.	22-27-27	1,351	O.S. drlg.
Harp, E. J., No. 1 Mount Poso, Kern Co.	27-26-28	1,845	P.B. 1,460
Goldman, F., No. 2 Mount Poso, Kern Co.	35-27-28	1,035	cleaning out
C. C. M. Oil Co., No. 1 Alford, Mount Poso, Kern Co	35-27-27	2,165	idle
W. H. G. Oil Co., No. 1 McVan, Mount Poso, Kern Co.	10-27-27	1,570	bailing
Magee, H. H., No. 2 Fruitvale, Kern Co.	23-29-27	2,981	sd. sh. drlg.
H. & H. Oil Co., No. 1 Fruitvale, Kern Co.	23-29-27	1,531	sd. sh. drlg.
Western Gulf Oil Co., No. 34 Fruitvale, Kern Co. ...	21-29-27	6,988	br. sh. drlg.
Kasey & Associates, No. 1 Fruitvale, Kern Co.	23-29-27	3,114	recmtd. 3,061
Meridian Oil Co., No. 2 Turner, Fruitvale, Kern Co...	23-29-27	3,195	sd. sh. drlg.
Omar Oil Co., No. 1 Fruitvale, Kern Co.	21-29-27	4,100	pump. 65 b.d.
Magnet Oil Co., No. 4 Fruitvale, Kern Co.	21-29-27	4,160	sd. sh. drlg.
Wood-Callahan Oil Co., No. 3 Mountain View, Kern Co.	25-30-28	4,800	sd. sh. drlg.
Hogan Pet. Co., No. 4 Symons, Mountain View, Kern	5-31-29	3,874	sd. sh. drlg.
Hogan Pet. Co., No. 8 Wharton, Mountain View, Kern	32-30-29	2,492	sd. sh. drlg.
Hogan Pet. Co., No. 9 Porter, Mountain View, Kern	29-30-29	6,098	pump. water
Liko Pet. Co., No. 1 Mountain View, Kern Co.	19-30-29	2,471	sd. sh. drlg.
Buffalo Oil Co., No. 6 Mountain View, Kern Co. ...	19-30-29	3,791	sd. sh. drlg.
Standard Oil Co., No. 4 Mabry, Mountain View, Kern	18-30-29	4,614	cmtd. 4,582
Ohio Oil Co., No. 1-B Derby, Mountain View, Kern	33-30-29	4,676	sd. sh. drlg.
Mohawk Pet. Co., No. 3 Hood, Mountain View, Kern	30-30-29	8,689	P.B. 6,015
Buffalo Oil Co., No. 1 Edison, Kern Co.	24-30-29	816	rig. to pump
Johnson-Leaf Oil Co., No. 1 Edison, Kern Co.	24-30-29	1,525	cleaning out
Mohawk Pet. Co., No. 3 Earl, Arvin, Kern Co.	4-31-29	4,200	sd. sh. drlg.
General Pet. Corp., No. 1 Arvin, Kern Co.	26-31-29	7,395	pump. 85 b.d.
Arkelo Oil Co., No. 1 Lerdo, Kern Co.	23-28-26	8,475	br. sh. drlg.
Associated Oil Co., No. 1 Rio Bravo, Kern Co.	30-29-25	8,303	redrlg. 8,140
Continental Oil Co., No. 1 Rosedale, Kern Co.	12-29-26	2,110	sd. sh. drlg.
Standard Oil Co., No. 11-2 Greeley, Kern Co.	20-29-26	6,571	sd. sh. drlg.
Standard Oil Co., No. 12-1 Greeley, Kern Co.	30-29-26	5,398	sd. sh. drlg.
Standard Oil Co., No. 14-1 Greeley, Kern Co.	4-30-26	5,595	sd. sh. drlg.
Union Oil Co., No. 1 San Emidio, Kern Co.	34-11-22	3,480	sd. sh. drlg.
Standard Oil Co., No. 9-1 Ten Section, Kern Co. ...	34-30-26	8,915	P.B. 8,122
Shell Oil Co., No. 34-29 Ten Section, Kern Co.	29-30-26	8,420	flw. 2,350 b.d.
Shell Oil Co., No. 78-30 Ten Section, Kern Co.	30-30-26	7,892	sd. sh. drlg.
Signal Oil & Gas Co., No. 1 Ten Section, Kern Co. ..	21-30-27	4,895	sd. sh. drlg.
Superior Oil Co., No. 8 Ten Section, Kern Co.	11-30-26	10,409	cmtd. 10,380
C. C. M. Oil Co., No. 26-21 Midway-Sunset, Kern Co.	21-32-23	2,335	O.S. drlg.
C. C. M. Oil Co., No. 23-21 Midway-Sunset, Kern Co.	21-32-23	2,120	br. sh. drlg.
C. C. M. Oil Co., No. 1-J Midway-Sunset, Kern Co. ..	21-32-23	2,095	redrlg. 1,896
Hancock Oil Co., No. 5 Midway-Sunset, Kern Co.	8-11-23	541	sd. sh. drlg.
Five Points Oil Co., No. 2-4 Midway-Sunset, Kern Co.	18-11-23	987	sd. sh. drlg.
Hallmark Oil Co., No. 6 Fried, Midway-Sunset, Kern	25-12-24	2,776	sd. sh. drlg.
General Pet. Corp., No. 49 Midway-Sunset, Kern Co.	24-31-23	2,953	sd. sh. drlg.
General Pet. Corp., No. 32-6 Midway-Sunset, Kern Co.	32-32-24	3,120	pump. 15 b.d.
Shell Oil Co., No. 1 Midway-Sunset, Kern Co.	22-32-23	2,112	O.S. drlg.
Merritt-Annex Oil Co., No. 3 Midway-Sunset, Kern Co.	25-12-24	2,818	cleaning out
Standard Oil Co., No. 39-23-D Midway-Sunset, Kern	23-32-24	3,187	sd. sh. drlg.
Standard Oil Co., No. 216-33-D Midway-Sunset, Kern	33-32-24	2,830	pump. 475 b.d
Standard Oil Co., No. 53-33-D Midway-Sunset, Kern	33-32-24	3,080	sd. sh. drlg.
Gibson Oil Co., No. 4 O'Brian, Midway-Sunset, Kern	6-11-23	3,065	cleaning out
Richfield Oil Co., No. 12 Midway-Sunset, Kern Co. ..	6-22-23	960	sd. sh. drlg.
McGray, Robert, No. 2 Midway-Sunset, Kern Co.	22-32-23	2,435	P.B. 2,386
Zamlock, Carl, No. 2 Midway-Sunset, Kern Co.	22-32-23	930	sd. sh. drlg.
Texas Co., No. 18 Midway-Sunset, Kern Co.	32-32-24	3,098	sd. sh. drlg.
Union Oil Co., No. 6 Keene, Midway-Sunset, Kern Co.	22-32-23	2,048	pump. 680 b.d.
Birch-Ranch Oil Co., No. 2 Midway-Sunset, Kern Co.	22-32-23	1,454	sd. sh. drlg.
Valley Oil Co., No. 1 Midway-Sunset, Kern Co.	18-32-23	552	sd. sh. drlg.
Pattiway Oil Co., No. 1 Midway-Sunset, Kern Co.	12-11-24	1,797	idle
Oil, Inc., No. 3 Midway-Sunset, Kern Co.	7-11-23	1,645	sd. sh. drlg.
Quality Oil Co., No. 4 Bull, Midway-Sunset, Kern Co.	22-32-23	1,200	sd. sh. drlg.
Petrolia Royalties, No. 1 Midway-Sunset, Kern Co. ...	21-32-22	161	sd. sh. drlg.
St. Helens Pet. Co., No. 1 Midway-Sunset, Kern Co	22-32-24	3,750	P.B. 3,645
Reserve Oil & Gas Co., No. 33-1 Tejon, Kern Co. ...	33-11-19	4,989	idle
Reserve Oil & Gas Co., No. 33-2 Tejon, Kern Co. ...	33-11-19	4,495	redrlg. 4,270
Reserve Oil & Gas Co., No. 33-3 Tejon, Kern Co. ...	33-11-19	4,431	cleaning out
Ohio Oil Co., No. 2 Tejon, Kern Co.	21-11-19	6,662	swabbing
Western Gulf, No. 3 Cantua, Fresno Co.	3-17-15	8,530	cleaning out
Union Oil Co., No. 2 Kettleman North, Fresno Co. ..	29-21-17	8,500	will redrl.
K. N. D. A., No. 4-18-J Kettleman North, Fresno Co.	18-21-17	9,400	P.B. 8,210
K. N. D. A., No. 25-20-J Kettleman North, Fresno Co.	20-21-17	8,650	cmtd. 8,610
K. N. D. A., No. 21-30-J Kettleman North, Fresno Co.	30-21-17	8,849	P.B. 8,725
K. N. D. A., No. 36-28-J Kettleman North, Fresno Co.	28-21-17	6,681	br. sh. drlg.
K. N. D. A., No. 63-28-J Kettleman North, Fresno Co.	28-21-17	8,480	flow. 180 b.d.
K. N. D. A., No. 65-28-J Kettleman North, Fresno Co.	28-21-17	2,291	sd. sh. drlg.
K. N. D. A., No. 83-24-H Kettleman North, Fresno Co.	24-21-16	8,935	P.B. 8,882
K. N. D. A., No. 85-32-J Kettleman North, Fresno Co.	32-21-17	8,485	redrlg. 8,271
K. N. D. A., No. 63-34-J Kettleman North, Fresno Co.	34-21-17	4,976	sd. sh. drlg.
Associated Oil Co., No. 3 Kettleman North, Kings Co.	35-21-17	8,858	cleaned out
Standard Oil Co., No. 8-19-J Kettleman North, Fresno	19-21-17	8,120	cmtd. 8,075
Standard Oil Co., No. 85-19-J Kettleman North, Fresno	19-21-17	8,619	fish. D.P.
Standard Oil Co., No. 46-13-H Kettleman North, Fresno	13-21-16	9,597	idle
Standard Oil Co., No. 38-33-J Kettleman North, Fresno	33-21-17	6,284	sd. sh. drlg.
Standard Oil Co., No. 78-3-P Kettleman North, Kings	3-22-17	5,740	sd. sh. drlg.
Standard Oil Co., No. 48-19-V Kettleman Middle, Kings	19-23-19	7,962	cleaning out
Temblor Oil Co., No. 1 Kettleman Middle, Kings Co.	25-23-18	5,935	cleaning out
Associated Oil Co., No. 2 Avenal, Kings Co.	35-23-17	1,960	gr. sd. drlg.
Calif. Producing Co., No. 1 Pattiway, San Luis Obispo	19-10-24	751	sd. sh. drlg.
Union Oil Co., No. 1 Huasna, San Luis Obispo Co. ...	22-32-15	4,788	br. sh. drlg.
Lewis, A. O., No. 1 Pecho, San Luis Obispo Co.	34-30-10	2,310	fishing
Cholame Synd., No. 1 Cholame, San Luis Obispo Co.	10-25-15	3,687	cleaning out

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L., center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sd. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporary abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

Texas Co., No. 1 King City, Monterey Co.	30-19-7	1,974	sd. sh. drlg.
Shell Oil Co., No. 1 Pleyto, Monterey Co.	34-24-10	8,994	P.B. 8,750
Shell Oil Co., No. 2 Pleyto, Monterey Co.	34-24-10	6,500	sd. sh. drlg.
Texas Co., No. 2 Eureka, Humboldt Co.	22- 3-1	7,418	cleaning out
Amerada Pet. Co., No. 5 Drouin, Rio Vista, Solano Co.	26- 4-2	4,500	40,000 m.c.f.
Associated Oil Co., No. 1 Sargent, San Benito Co. ...	5-12-4	6,176	hd. sd. drlg.
Standard Oil Co., No. 5 McDonald Island, San Joaquin	31- 2-5	5,312	15,000 m.c.f.
Buttes Oilfields, Ltd., No. 1 Kent, Sutter Co.	2-15-1	5,098	will cmt.
Jenninga, E. P., No. 1 Allensworth, Tulare Co.	4-24-23	2,708	cmtd. 2,666
Trico Oil & Gas Co., No. 1 Tipton, Tulare Co.	27-21-25	3,865	looks wet

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Caminol Oil Co., No. 1 El Segundo, Los Angeles Co.	18- 3-14	6,775	sd. sh. drlg.
Caminol Oil Co., No. 2 El Segundo, Los Angeles Co.	18- 3-14	6,620	sd. sh. drlg.
Richfield Oil Co., No. 2 El Segundo, Los Angeles Co.	18- 3-14	7,293	sd. sh. drlg.
Richfield Oil Co., No. 4 El Segundo, Los Angeles Co.	18- 3-14	7,097	sd. sh. drlg.
Ohio Oil Co., No. 2 El Segundo, Los Angeles Co.	7- 3-14	7,312	sd. sh. drlg.
Texas Co., No. 2-1 El Segundo, Los Angeles Co.	17- 3-14	7,400	sd. sh. drlg.
Texas Co., No. 1 Security, El Segundo, Los Angeles Co.	18- 3-14	5,876	sd. sh. drlg.
Republic Pet. Co. No. 3 El Segundo, Los Angeles Co.	18- 3-14	7,160	sd. sh. drlg.
Republic Pet. Co., No. 4 El Segundo, Los Angeles Co.	18- 3-14	6,370	sd. sh. drlg.
Republic Pet. Co., No. 5 El Segundo, Los Angeles Co.	18- 3-14	3,551	sd. sh. drlg.
Royalty Service Corp., No. 1 El Segundo, Los Angeles	7- 3-14	6,497	sd. sh. drlg.
Union Oil Co., No. 1 El Segundo, Los Angeles Co. ...	18- 3-14	7,260	sd. sh. drlg.
Leora Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,464	sd. sh. drlg.
Signal Finance Co., No. 1 Hawthorne, Los Angeles Co.	10- 3-14	9,395	testing
Imperial Gypsum, No. 1 Moneta, Los Angeles Co. ...	35- 3-14	7,209	cleaning out
C. C. M. Oil Co., No. 18 Torrance, Los Angeles Co. ...	31- 3-14	4,535	P.B. 4,467
Fullerton Oil Co., No. 4 Torrance, Los Angeles Co. ...	18- 4-14	4,626	rig. to pump
Willett, P. W., No. 1 Torrance, Los Angeles Co.	18- 4-14	1,160	sd. sh. drlg.
Hunt Oil Co., No. 1 Torrance, Los Angeles Co.	18- 4-14	4,761	P.B. 4,625
Abrams, J., & Associates, No. 1 Redondo, Los Angeles	16- 4-14	3,640	redrlg. 1,853
McLaren & Associates, No. 1 Palos Verdes, Los Angeles	27- 4-14	3,992	redrlg. 1,600
Country Club Oil Co., No. 1 Inglewood, Los Angeles Co.	19- 2-14	690	sd. sh. drlg.
Shell Oil Co., No. 4 Rubel, Inglewood, Los Angeles Co.	8- 2-14	2,507	P.B. 1,210
Shell Oil Co., No. 89 Reyes, Dominguez, Los Angeles	33- 3-13	5,264	sd. sh. drlg.
Shell Oil Co., No. 90 Reyes, Dominguez, Los Angeles	33- 3-13	5,620	sd. sh. drlg.
Shell Oil Co., No. 2 Manuel, Dominguez, Los Angeles	33- 3-13	4,300	sd. sh. drlg.
Union Oil, No. 48 Callender, Dominguez, Los Angeles	33- 3-13	6,815	sd. sh. drlg.
Union Oil, No. 50 Callender, Dominguez, Los Angeles	33- 3-13	9,150	sd. sh. drlg.
Union Oil, No. 53 Callender, Dominguez, Los Angeles	33- 3-13	3,887	test. W.S.O.
Union Oil, No. 9 Carson, Dominguez, Los Angeles	33- 3-13	5,691	sd. sh. drlg.
Barnsdall Oil Co., No. 10 Rosecrans, Los Angeles Co.	20- 3-13	7,565	hd. sd. drlg.
Shell Oil Co., No. 1 Rosecrans, Los Angeles Co.	20- 3-13	7,476	sd. sh. drlg.
Hildon Oil Co., No. 1 Flood Control, Los Angeles Co.	11- 4-13	6,043	redrlg. 4,750
Union Oil Co., No. 16 D.R., Playa Del Rey, Los Angeles	27- 2-15	5,290	sd. sh. drlg.
Barnsdall Oil Co., No. 1 Newhall, Los Angeles Co. ..	26- 3-17	6,276	cleaning out
Selegna Oil Co., No. 3 Wilmington, Los Angeles Co.	33- 4-13	2,070	sd. sh. drlg.
Getty Oil Co., No. 2 Wilmington, Los Angeles Co. ...	33- 4-13	2,941	cmtd.
Bankline Oil Co., No. 7-1 Wilmington, Los Angeles Co.	33- 4-13	1,520	sd. sh. drlg.
Wilmington O. & D., No. 1 Wilmington, Los Angeles	33- 4-13	993	sd. sh. drlg.
Sovereign Oil Co., No. 3 Wilmington, Los Angeles Co.	33- 4-13	3,760	sd. sh. drlg.
Pacific Western Oil, No. 1 Wilmington, Los Angeles	33- 4-13	2,956	sd. sh. drlg.
Pacific Western Oil, No. 2 Wilmington, Los Angeles	33- 4-13	810	sd. sh. drlg.
Royalty Service, No. 2-C Wilmington, Los Angeles Co.	5- 5-13	150	idle
Gauthier Oil Co., No. 2 Wilmington, Los Angeles Co.	27- 4-13	973	sd. sh. drlg.
Drillers, Inc., No. 1 Whittier, Los Angeles Co.	22- 2-11	831	sd. sh. drlg.
Honolulu Oil Corp., No. 1 Puente, Los Angeles Co. ..	15- 2-10	2,775	gr. sd. drlg.
Richfield Oil, No. 2 Nutt, Montebello, Los Angeles ..	5- 2-11	5,574	sd. sh. drlg.
Richfield Oil, No. 1 Estrada, Montebello, Los Angeles	5- 2-11	3,382	sd. sh. drlg.
Universal Consd., No. 1-J Nutt, Montebello, L. Angeles	5- 2-11	6,540	deepening
Texas Co., No. 16 Baldwin, Montebello, Los Angeles	6- 2-11	2,640	sd. sh. drlg.
St. Helens Pet., No. 7 P. & B., Montebello, Los Angeles	5- 2-11	5,880	sd. sh. drlg.
Union Oil Co., No. 26 Montebello, Los Angeles Co. ...	1- 2-12	2,260	sd. sh. drlg.
Hobbs Pet. Corp., No. 1 Long Beach, Los Angeles Co.	29- 4-12	2,994	recmtd. 2,920
Hathaway, No. 2 Fulton, Santa Fe Springs, Los Angeles	6- 3-11	4,650	P.B. 3,500
Union Oil Co., No. 100 Santa Fe Springs, Los Angeles	6- 3-11	9,390	sd. sh. drlg.
Italo Pet. Corp., No. 1 Santa Fe Springs, Los Angeles	5- 3-11	4,525	reaming
Julian & Criswell, No. 1 Walnut, Los Angeles Co. ...	5- 2-9	1,350	cleaning out
Terry, George, No. 2 Crane, Huntington, Orange Co. ..	2- 6-11	3,958	cleaning out
Petroleum Co., No. 5 Wilson, Huntington, Orange Co.	2- 6-11	3,341	sd. sh. drlg.
Re-Mine Oil Co., No. 2 Huntington, Orange Co.	2- 6-11	4,000	sd. sh. drlg.
Texas Co., No. 4 V.M., Huntington, Orange Co.	34- 5-11	4,637	recmtd. 4,521
Richrow Oil Co., No. 2 Huntington, Orange Co.	34- 5-11	1,840	sd. sh. drlg.
Orco Oil Co., No. 5 Huntington, Orange Co.	2- 6-11	4,284	sd. sh. drlg.
South Basin Oil Co., No. 94 Huntington, Orange Co.	2- 6-11	4,060	cmtd. 3,845
Elliott Oil Co., No. 1 Huntington, Orange Co.	34- 5-11	4,066	P.B. 3,876
M. F. K. Oil Co., No. 1 Huntington, Orange Co.	2- 6-11	3,306	P.B. 2,854
Richfield Oil, No. 1 Community, Huntington, Orange	34- 5-11	3,971	sd. sh. drlg.
Richfield Oil, No. 3 Anchor, Huntington, Orange Co.	34- 5-11	4,652	cleaning out
Commander Oil Co., No. 1 Newport, Orange Co.	29- 6-10	5,587	br. sh. drlg.
Fullerton Oil Co., No. 20 Brea, Orange Co.	2- 3-10	5,154	redrlg. 3,363
Standard Oil Co., No. 62 Emery, West Coyote, Orange	13- 3-11	3,940	sd. sh. drlg.
Bandini Pet. Co., No. 1 East Coyote, Orange Co.	17- 3-9	2,721	sd. sh. drlg.
Dolicia Oil Co., No. 2 East Coyote, Orange Co.	24- 3-10	3,471	sd. sh. drlg.
Graham & Loftus, No. 1 East Coyote, Orange Co. ...	18- 3-9	4,326	cleaning out
Bartholomae Oil Co., No. 3 East Coyote, Orange Co.	22- 3-10	5,097	flow. 385 b.d.
Shell Oil Co., No. 1 Mathis, Anaheim, Orange Co.	23- 4-10	2,275	sd. sh. drlg.
West Coast Ref. Co., No. 1 Santa Ana, Orange Co. ...	25- 3-9	3,415	dry; abd.
Joseph, Arthur, No. 1 Richfield, Orange Co.	29- 3-9	1,071	sd. sh. drlg.
Bachman Pet. Co., No. 1 Richfield, Orange Co.	29- 3-9	3,810	sd. sh. drlg.
Union Oil Co., No. 29 Chapman, Richfield, Orange Co.	30- 3-9	3,610	redrlg. 7,096
Union Oil Co., No. 43 Chapman, Richfield, Orange Co.	29- 3-9	3,069	sd. sh. drlg.
Union Oil Co., No. 44 Chapman, Richfield, Orange Co.	29- 3-9	1,980	sd. sh. drlg.
Standard Oil Co., No. 2-24 Kraemer, Richfield, Orange	32- 3-9	4,598	P.B. 4,550

KANSAS

Week Ending February 20 (Descriptions are East unless marked otherwise)

Barton County

John Burton No. 1 Wendel, NE cor. sec. 13-19-11w. Anhy. 785 ft.; S.D. 2,856 ft.

C. L. Carlock et al No. 1 Leibel, SE NE SE sec. 18-18-11w. Spudded.

Duwe & Brouk No. 1 Baker, NE SE SW sec. 16-17-13w. Drlg. 3,055 ft.

Pierson et al No. 1 Hart, SW SW NE sec. 9-20-13w. Loc.

Hendon Drlg. Co. and Morgan & Flynn No. 1 Robenseifer, C NW sec. 7-18-15w. Rng. 15-in. csg. 420 ft.

Indian Terr. Illm. Oil Co. No. 1 Schrapel, SE SE NE sec. 26-20-11w. Drlg. 2,625 ft.

S. L. Parks No. 1 Peach, SE cor. sec. 24-16-14w. S.D. 395 ft.

C. L. Price et al No. 1 Kraft, SW NW NE sec. 10-17-11w. Drlg. 405 ft.

Stanolind O. & G. Co. No. 2 Burmeister, NE NE SW sec. 33-19-11w. Cong. 3,315 ft.; Sil. 3,324 ft.; T.D. 3,342 ft.; ½ B. O.P.H.; to acidize.

Ralph Wixson and Union O. & G. Co. No. 1 Frederick, NW cor. sec. 12-16-13w. Cellar.

Butler County

Cox & McGinnis No. 1 Faulders, SW SW NE sec. 27-25-3e. Drlg. 2,990 ft.

A. M. Landon et al No. 1 McCaig, NE NE SE sec. 13-28-6. Loc.

Chase County

Propp et al No. 1 Fromm, SE cor. sec. 29-18-9e. Fsg. 2,440 ft.

Chautauqua County

Broslus et al No. 1 Morris, SW NW SW sec. 6-32-12. Chat 1,795 ft.; L. 2,047 ft.; S.D. 2,049 ft.

Cowley County

W. M. McKnabb No. 1 Community, C NE NW sec. 14-34-3e. O.W.D.D.; drlg. 2,950 ft.

W. M. McKnabb No. 1 Weldschmidt, SW SW NW sec. 18-34-6e. Drlg. 1,900 ft.

Earl Wakefield et al No. 1 Knapp, SW SW NW sec. 2-34-5e. Dry Bartlesville sd. 3,042-60 ft.; Chat 3,105 ft.; drlg. 3,113 ft.

L. H. Wentz and Amerada Pet. Corp. No. 1 Rush, NW SW SW sec. 36-34-6e. Spd.

Decatur County

Winkler & Koch No. 1 Vessey, C NW SE sec. 26-3-26w. Topeka 3,415 ft.; K.C. 3,460-3,826 ft.; S.D. 4,007 ft.

Edwards County

Stanolind O. & G. Co. et al No. 1 Donovan, C SE SE sec. 14-26-18w. Simpson 4,790 ft.; Sil. 4,872 ft.; T.D. 4,984 ft.; D.&A.

Ellis County

Empire O. & R. Co. No. 1 Hall, SE cor. sec. 2-12-17w. Anhy. 1,300 ft.; drlg. 2,565 ft.

Ted Kors et al No. 1 Koblitz, SE SW NW sec. 23-12-18w. Pay 3,694-98 ft.; swb. 48 B.O. and swbd. down; T.D. 3,699 ft.; small increase.

Lario O. & G. Co. et al No. 1 Cress, NE cor. sec. 13-11-17w. Whipstock 2,670 ft.; drlg. by at 2,775 ft.

Mazda Oil Co. No. 1 Henderson, SW SW NE sec. 27-11-18w. Loc.

Murphy Oil Co. No. 1 Wiesner, SE SE SW sec. 12-14-18w. Anhy. 1,440 ft.; drlg. 2,845 ft.

Noble Pet. Corp. No. 1 O'Laughlin, NW NW SE sec. 13-12-19w. R.U.

Sunray Oil Co. No. 1 Befort, NE cor. sec. 11-14-20w. Anhy. 1,530 ft.; drlg. 2,900 ft.

Earl Wakefield No. 1 Putnam Mortgage Co., SE SE NW sec. 32-15-17w. Loc.

Winkler & Koch No. 1 Jensen, SW SW NE sec. 3-13-18w. S.D. 80 ft.

Finney County

Keith & Olson Drlg. Co. No. 1 Ely, NW NW SW sec. 34-22-29w. R.U.R.

Grant County

Columbian Fuel Co. No. 1 Gray, C SE sec. 3-29-35w. Drlg. 1,520 ft.

Greenwood County

Hollis et al No. 1 Boone, NW NE NE SW sec. 21-26-12. S.D. 1,130 ft.

Ohio Oil Co. No. 1 Schwab, SE SW SE sec. 9-24-10. Burgess 2,337 ft.; L. 2,337 ft.; set 6-in. 2,452 ft.

Harper County

Carter Oil Co. et al No. 1 Selhart Est., C SW NW sec. 4-34-8w. M.I.M.

Harvey County

Harburney Oil Co. No. 1 Schrag, NW NW SE sec. 24-22-3w. S.O. 3,700 ft.; fsg. 3,711 ft.

Haskell County

Kuhn Bros. et al No. 1 Meredith, C SW sec. 10-30-33w. O.W.D.D.; R.U.

Kearney County

J. L. Murphy No. 1 Campbell, NW NW SW sec. 32-25-35w. Anhy. 1,900 ft.; set 7-in. csg. at 2,780 ft.

Kingman County

Shell Pet. Corp. No. 1 McMichael, C W½ W½ SW sec. 12-27-10w. Chat 4,037 ft.; drlg. 4,100 ft.

Lane County

K. C. Bates No. 1 Bates-Nimocks, C NW NE sec. 16-16-28w. Base Cong. and top Miss. 4,485 ft.; specks of oil in cores; drlg. 4,685 ft.

Logan County

Rose Spring Drlg. Co. et al No. 1 Wright, C SE SE sec. 12-15-35w. Anhy. 2,330 ft.; Ft. Riley 2,868 ft.; T.D. 3,909 ft.; fsg.

Lyon County

Young et al No. 1-A Murphy, SE NW NE sec. 32-21-11. Fsg. 1,380 ft.

McPherson County

Bradley Bros. No. 1 Barnholt, SW SW SE sec. 30-20-5w. Loc.

Fred C. Frank et al No. 1 Doles, SE NW NE sec. 12-19-1w. R.U.

Hutchinson O. & G. Co. et al No. 1 Berg, SW SW SE sec. 15-20-3w. Drlg. 1,330 ft.

Smith et al No. 1 Larson, NW NW SW sec. 35-18-5w. M.I.M.

Wamhoff et al No. 1 Nuse, SE NE SW sec. 18-18-4w. M.I.M.

Meade County

Pacific Midwest Co. No. 1 Rexford, NE SE SW sec. 8-30-29w. R.U.

Mitchell County

Geo. Siedhoff et al No. 1 Greiss, SW SW SE sec. 16-8-10w. S.D. 2,200 ft.

Ness County

Newton Dev. Co. No. 1 Tenny, NW NW SE sec. 19-18-25w. Topeka 3,524 ft.; H. F.W. 3,568 ft.; S.D. 3,587 ft.

Pratt County

H. V. Elwell et al No. 1 Fay, NW NW SE sec. 15-27-14w. Whipstock 2,580 ft.; S.D.

Reno County

Atlantic Ref. Co. No. 1 Page, SE NW NW sec. 19-23-7w. R.U.R.

Carlock et al No. 1 Brown Royalty Co. NW NW NE sec. 32-22-10w. K.C. 3,258 ft.; Cong. 3,605 ft.; Sil. 3,690 ft.; T.D. 3,705 ft.; D.&A.

Foraker et al No. 1 Hiett, SE SW NE sec. 34-24-4w. S.D. 3,848 ft.

Helmerick & Payne No. 1 Benson, NE cor. sec. 5-25-6w. Chat 3,663 ft.; drlg. 3,708 ft.

Helmerich & Payne et al No. 1 Evans, NE NE SE sec. 29-24-6w. Rotary rig.

Clyde Pulse No. 1 Payne, SW NW NE sec. 4-22-7w. K.C. 2,907 ft.; H.F.W. 2,957-62 ft.; drlg. 3,100 ft.

Olson Drlg. Co. et al No. 1 Herriman, NW cor. sec. 22-30-33w. B.R.R.

Rice County

Buckley No. 1 Bailey, SW SW NW sec. 19-20-6w. S.D. 1,000 ft.

Carlock et al No. 1 Deweese, SW NW NW sec. 32-20-7w. S.D. 3,675 ft.

Continental Oil Co. et al No. 1 Michekis, NE NE SW sec. 12-18-8w. R.U.R.

L. E. Douglass No. 1 Coyne, NE SE SE sec. 24-21-8w. R.U.

Dickey Oil Co. No. 1 Brothers, SE cor. sec. 1-21-7w. O.W.D.D.; T.D. 3,567 ft.; no change; D.&A.

Empire O. & R. Co. No. 1 Banterton, SE SW SE sec. 11-18-8w. Sil. 3,246 ft. (cor.); drlg. 3,270 ft.; 2 B.O.P.H.

Hanna et al No. 1 Brothers, SE SE NW sec. 25-20-8w. Drlg. 1,945 ft.

John Hanna et al No. 1 Fulton, NW NW NE sec. 24-19-6w. R.U.

T. C. Johnson No. 1 Shubert, SW cor. sec. 9-20-10w. R.U.

Manning & Martin et al No. 1 Mathes, SE SW NE sec. 27-21-8w. Rot. rig.

Roy Ramsey et al No. 1 Malone, NW NW NE sec. 1-20-10w. B.R.

Union Oil & Refining Co. et al No. 1 Baker, SW SW NE sec. 33-20-6w. M.I.M.

W. E. Witt et al No. 1 Fair, NW SE SE sec. 4-22-8w. Rig.

Rooks County

Basin Oil Co. No. 1 Baxa, NE cor. sec. 23-9-17w. S.D. 2,000 ft.

Buckner & Schoff No. 1 McConnel, NE cor. sec. 34-6s-18w. S.D. 2,645 ft.

Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. T.D. 3,296 ft.; acidized; P. 187 B.O. and 100 B.W. in 18 hrs.; pmpd. off.

Jones Bros. No. 1 Wiss, NW cor. sec. 8-10-18w. Spudded.

J. H. Lester No. 1 Methene, SE SE NE sec. 29-10-20w. Fsg. 3,422 ft.

Snowden & McSweeney No. 1 Hindman, C E½ NW sec. 35-7s-17w. K.C. 3,023 ft.; T.D. 3,109 ft.; 200 ft. O.I.H.; S. 2½ B. O.P.H.

Rush County

S. A. Murphy et al No. 1 Roth, NW NW SW sec. 21-16-18w. R.U.

Russell County

El Dorado Refining Co. No. 1 Scott, NW NW NE sec. 17-13-13w. Simpson 3,333 ft.; Sil. 3,504 ft.; T.D. 3,554 ft.; D.&A.

Empire O. & R. Co. No. 1 Vaughn, SW cor. sec. 17-14-14w. Anhy. 835 ft.; drlg. 2,135 ft.

Equity Gas Co. No. 1 Harbaugh, NW NE SW sec. 19-13-12w. Set 10-in. csg. 780 ft. W.O.C.

Getty, Inc., No. 1 Baxter, SE SE NE sec. 8-15-15w. Anhy. 892 ft.; Topeka 2,795 ft.; K.C. 3,080 ft.; drlg. 3,140 ft.

Shields et al No. 1 Gross, NW NW SE sec. 5-15-13w. Loc.

Saline County

Ryan Consd. No. 1 Wuerth, SW SW NW sec. 28-14-2w. Fsg. 1,870 ft.

Sedgwick County

Cameron et al No. 1 Smith, SW SE SE sec. 13-27-2e. Drlg. 1,650 ft.

Roxana Drlg. Co. et al No. 1 Woodman, SW NW SW sec. 26-26-1w. B.R.R.

E. M. Swearer et al No. 1 Thome, SW SW NW sec. 19-28-1w. B.R.R.

Scott County

C. R. Blackman et al No. 1 Nolan, NW NW NE sec. 13-19-33w. Loc.

Stafford County

Empire Ref. Co. et al No. 1 Jordon, SW SW NW sec. 15-25-14w. Simp. 4,210 ft.; Sil. 4,252 ft.; T.D. 4,267 ft.; sulfur wtr.; P.B. 3,943 ft.; shot; 3,200 ft. O.I.H. in 3 hrs.

Empire O. & R. Co. No. 1 O'Connor, NE cor. sec. 17-24-15w. Viola 4,010 ft.; Simpson 4,040 ft.; some saturation 4,066-67 ft.; cg.

J. E. Trigg and Vernon Oil & Gas Co. No. 1 Andrea, SE cor. sec. 4-23-12w. B.R.R.

Sumner County

Empire O. & R. Co. No. 1 Hoffman, NW NW SW sec. 27-34-1e. Simpson 4,077 ft.; T.D. 4,086 ft.; D.&A.

Graham et al No. 1 Dawson, NW NW NW sec. 4-33-2w. Fsg. 3,755 ft.

C. M. HEETER, SONS & CO., INC.
MAIN OFFICE AND WORKS, BUTLER, PA.

"Heeter's" Packers and Swabs

Heeter's Improved Patent Swabs, Corrugated Friction Sockets, Wire Line Pumping Outfits, Sand Pumps and other Gas and Oil Well Materials.

Hapenny & Green et al No. 1 Evers, SE SE NE sec. 27-31-2. S.D. 519 ft.

Olson Drlg. Co. et al No. 1 Barr, SE cor. sec. 8-34-2w. B.R.R.

Orcott & Stewart No. 1 Newton, SE cor. sec. 21-30-2. O.W.W.D.; S.D. 930 ft.

E. B. Shawver et al No. 1 Bryan, C W½ W½ SW sec. 36-30-2w. B.R.R.

Lloyd, Study & Frost et al No. 1 fee, SE cor. sec. 31-34-1e. S.S.O. and G. 3,884-87 ft.; inc. 3,897-3,902 ft.; B. lime 3,919 ft.; Simp. 3,968-73 ft.; T.D.; D.&A.

C. H. Westfall et al No. 1 Rogers, SW NW SW sec. 35-31-2w. S.D. 700 ft.

Trego County

Black Gold Oil Co. No. 1 Allman, C SW SW sec. 34-14-21w. Drlg. 870 ft.

Central Commercial Oil Co. No. 1 Burkett, C SW sec. 15-11-22w. O.W.D.D.; fsg. 4,100 ft.

Woodson County

Reamer No. 1 Corn, NE cor. sec. 31-26-15 Drlg. 1,820 ft.

OKLAHOMA

Week Ending February 20

NORTHERN OKLAHOMA

Beckham County

Carter Oil Co. No. 1 Garrett, NE cor. sec. 11-7n-25w. Drlg. red beds 544 ft.

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. Rigging mach.

Caddo County

Clyde Becker et al No. 1 Pharris, SE SE NW sec. 24-6-12w. Cellar and pits.

Cleveland County

Helmerich & Payne, Inc. No. 1 Glenn, C NW NE sec. 6-8-1w. Dense 7,260 ft.; dol. 7,295 ft.; drlg. 7,482 ft.

W. R. Hollenbeck No. 1 Norman, NW NW NE sec. 17-9-2w. Rig.

Coal County

Continental Oil Co. No. 1 Breedlove, NW SW SW sec. 24-1-8. Wilcox 6,045 ft.; T.D. 6,054 ft.; sulfur odor and salty cores; D.&A.

Continental Oil Co. No. 1 King, NE SW NE sec. 26-1-8. Wilcox 5,743 ft.; T.D. 5,762½ ft.; P.B. 836 ft.; P. 69 B.O. in 8½ hrs.; comp.

Continental Oil Co. No. 1 W. Kirby, SW SE SW sec. 23-1n-8e. Hunton 4,662 ft.; T.D. 4,690 ft.; D.&A.

Ruwoldt & Couch No. 1 McMillan, SW cor. sec. 10-1s-8. T.D. 1,210 ft.; S.D. for csg.

Creek County

J. E. Crosbie, Inc. & Sinclair Prairie Oil Co. No. 1 Bailey, NE NW NW sec. 25-15-7. Drlg. 1,605 ft.

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 2,870 ft.; S.D

W. J. Sherry No. 1 Hall, SW SW NE sec. 2-15-7. Spd.

Garfield County

Arab Oil Co. No. 1 Harkendorf, NE cor. sec. 34-20-3w. Set 12½-in. csg. 237 ft.; W.O.C.

Garvin County

Hayes Drlg. Co. No. 1 Howell, NW SE NW sec. 34-1-1. R.U.R.

Harmon County

Licalko Trust, Ltd. No. 1 Crosnoe, SE SE SW sec. 14-3n-25w. T.D. 2,980 ft.; C.O. to 2,980 ft.

Penn State Oil Co. No. 1 Cole, C W½ SW NW sec. 21-2n-26w. Loc.

Hughes County

W. W. Bussett No. 1 Field, C NW SW sec. 11-9-11. S.D.

Carson Oil Co. No. 1 Lyter, NE NW SW sec. 31-8-12. Atoka 2,470 ft.; Gilcrease 2,955 ft.; Wapa. 3,317 ft.; S.S.O.; drlg. 3,405 ft.

Mid-Western Prod. Co. No. 1 Hill C SE NW sec. 13-9-9. Gilcrease 2,875 ft. (S.L. M.); T.D. 2,880 ft.; 28,000,000 ft. gas; S.I.

Southern Oil Co. No. 1 Buck, C NW SW SW sec. 21-8-10. R.U.S.T.

C. J. Wrightsman No. 1 Diamond, NE NE SE sec. 33-9-9. T.D. 3,475 ft.; shot off drill pipe 3,055 ft.; washing over.

Kay County

G. A. Brown et al No. 1-A Harris, SW SW NE sec. 14-25-1e. S.D.

Ritz Oil & Gas Co. No. 1 State, NW NE SW sec. 16-29-2w. Drlg. 3,350 ft.

Kiowa County

Argus Pet. Co. No. 1 Osborne, NW cor. NE sec. 9-7-16w. T.D. 1,225 ft.; S.D.

McWhirter & Francis No. 1 Padgett, NE NE NW SE sec. 3-5-17w. S.D. 610 ft.

Latimer County

Cheyenne Oil Co. No. 1 Wilson, C SE SE sec. 15-5-18. T.D. 2,902 ft.; S.D.

Le Flore County

McCraw et al No. 1 Tidwell, C NW SE sec. 17-3-22. 10-in. 2,246 ft.; T.D. 2,340 ft.; S.D.

Lincoln County

Anderson-Prichard Oil Corp. No. 1 Colon, C N½ SE SW sec. 28-17-4e. Bartlesville 3,767-3,840 ft.; drlg. 3,860 ft.

Logan County

Anthony & Marshall No. 1 Fruin-Eckman, SE SE SW sec. 4-16-1e. C.O. iron at 4,959 ft.

Harry Blackstock No. 1 Prince, SE NE SW sec. 11-17-3w. Drlg. 4,280 ft.

Helmerich & Payne et al No. 1 Ruck, C NE SE sec. 9-19-2w. Rig corners.

Muskogee County

A. D. Spears et al No. 1 Robbins, NW cor. sec. 20-15-20. Turkey Mt. sd. 1,677-84 ft.; Arbuckle 1,710 ft.; T.D. 1,811 ft.; S.S.O.; S.D.

Okfuskee County

Harvey Oil Co. No. 1 Stewart, NE cor. sec. 31-10-9. Set 10-in. csg. at 61 ft.; S.D.

Osage County

Norbla Oil Co. No. 1 Osage, NE NE SW sec. 13-23-6. Drlg. 555 ft.

Pawnee County

Forest Dev. Corp. No. 1 Greisel, C NW NE sec. 21-21-5. Drlg. 2,500 ft.

Forest Dev. Corp. No. 1 Markham, SW NE SE sec. 10-21-5e. Rig.

Pittsburg County

Okla. Dist. Oil Co. No. 1 Beeler, NE NE SW sec. 7-7-14. Wapanucka 4,490 ft.; drlg. 4,975 ft.

Pontotoc County

Caloma Oil Corp. No. 1 Brentz, SE NE SW sec. 4-1-6. S.D. 503 ft.

E. H. Moore et al No. 1 Muse, SW NE SE sec. 33-2n-7. Hunton 3,876 ft.; S.O. in cores; packer 3,865 ft.; open 1½ hrs., 90 ft. mud and S.S.G.; drlg. 4,065 ft.

L. K. Sandback et al No. 1 Whittaker, NW NE SE sec. 31-4-6. Cellar.

Pottawatomie County

Champlin Ref. Co. No. 1 Buckler, SE NE NE sec. 7-6n-4e. Rig.

Mid-Continent Pet. Corp. No. 1 Logan, NE NE SE sec. 31-11-5. Shot off drill pipe at 3,252 ft.; P.B. 3,194 ft.; set whipstock, 3,256 ft.; ran Eastman survey.

B. H. Rowlett et al No. 1 Burson, SW SW NE sec. 21-9-4e. Loc.

Pushmataha County

Erle Halliburton et al No. 1 Bagwell, SW NE NE sec. 30-3s-15e. Drlg. 790 ft.

Seminole County

Carter Oil Co. et al No. 1 Simpson, SW SW NE sec. 7-8-8. Syl. 4,335 ft.; Viola 4,410 ft.; Dense 4,445 ft.; Dol. 4,450 ft.; first Wilcox 4,472 ft.; second Wilcox 4,490 ft.; T.D. 4,505 ft.; P.B. 1,476 ft.; 500,000 ft. gas, no oil; flwd. S.W.; D.&A.

J. H. Hudson et al No. 1 Tanyan, SE SE SW sec. 32-10-7. Bldg.

R. M. Purcell No. 1 Gilliland, SE SE SW sec. 24-11-7. Loc.

Sinclair Prairie Oil Co. No. 1 Rossanna, NW NW SW sec. 28-10-8. Set 16-in. 123 ft.; W.O.C.

Papoose Oil Co. No. 1 Yarber, SW SW NW sec. 15-11-8. R.U.R.

A. I. Spears No. 1 Keaton, NW cor. sec. 6-5-8. Rig.

Texas County

Allison & Barnhill No. 1 Bingley, SE SE NE sec. 30-2n-18. (Cimmaron Meridian). T.D. 2,919 ft.; P.B. to 2,750 ft.; shot; 4,100,000 ft. gas; comp.

Cabot Carbon Co. No. 1 Castro, C NE sec. 19-3n-17ecm. B.R.

Missouri Valley Gas Corp. No. 1 well, C sec. 17-6n-14ecm. Loc.

Washita County

L. P. McWhirter No. 1 fee, SW cor. sec. 34-8-19w. T.D. 1,754 ft. S.D.

SOUTHERN OKLAHOMA

Atoka County

A. J. Sanders No. 2 Redden, SE SW SW sec. 19-1n-15e. T.D. 1,260 ft.; S.D.

Carter County

Lyle-Wham Dev. Co. No. 1 Jackson, NE SW SW sec. 26-5s-1e. T.D. 748 ft.; S.D. for csg.

Choctaw County

Cooper & Branstetter No. 1 Bell, C NW NE sec. 29-6s-17. S.D. 1,187 ft.

Comanche County

Frank Scott No. 1-A Kuntz, SE NE SE sec. 21-4-11w. Woodford 896 ft.; Hunton 1,752 ft.; drlg. 2,190 ft.

C. V. Morris No. 1 Young, SE NE SE sec. 24-3n-10w. T.D. 822 ft.; S.D.

L. D. Wise No. 1 Cones, SE SE SW sec. 11-1n-10w. T.D. 2,156 ft.; S.D.

Cotton County

Phillips Pet. Co. No. 1 Moore, SW SW NE sec. 6-5s-12w. Drlg. 1,490 ft.

Jefferson County

Buffalo Oil Co. No. 1 Crownover, SE SE NW sec. 21-6s-6w. T.D. 1,148 ft.; tools stuck; pulling csg.

Massad & Swansberger No. 1 Barrett, NE cor. SE SE sec. 14-6s-6w. T.D. 1,530 ft.; S.D.

Johnston County

Patton et al No. 1 McCrummens, SW SW NE sec. 16-1s-6e. Drlg. 883 ft.

Love County

W. H. Riddle et al No. 1 Johnson, C SW SE cor. sec. 20-8s-2w. T.D. 4,009 ft.; waiting for tools; will deepen.

Sinclair Prairie Oil Co. No. 1 Stockton, SE SE SW sec. 26-6s-2w. T.D. 8,583 ft.; P.B. 6,927 ft.; W.O.C.

Marshall County

Stuart & Taylor No. 1 Chestnut, NE cor Arbuckle 885-90 ft.; S.O. and G.; U.R. 5 3/16-in. csg.

Murray County

Power Oil Co. et al No. 1 Lancaster Trust C SW NE sec. 10-1s-2e. Viola 3,398 ft.; S.O. 3,398-3,403 ft.; drlg. 3,411 ft.

J. Ben Russell No. 1 fee, SE SE NW SE sec. 9-2s-3e. T.D. 1,012 ft.; U.R. 8-in. csg.

Stephens County

Angle & Angle No. 1 Irvine, SW SW NE sec. 24-1n-7w. Loc.

William Angle No. 1 Posey, C NW NW sec. 8-1n-8w. T.D. 102 ft.; set 12-in. csg.; W.O.C.

Carter Oil Co. No. 1 Harley, C NE NE sec. 24-2s-4w. Drlg. 1,227 ft.; in Cong.

Jack Cohen No. 1 Pierce, NE NE NW sec 24-2s-6w. T.D. 400 ft.; S.D. for fuel.

Coline Oil Co. No. 1 Johnson, SW SE NE NE sec. 1-2n-8w. T.D. 6,500 ft.; S.D.O.

H. J. Edwards No. 1 Frederick, SW cor. NE SE NW sec. 31-2n-8w. T.D. 2,800 ft.; S.D.

Helmerich & Payne No. 1 Graham, SW SW NE sec. 12-1n-5w. T.D. 90 ft.; set 12½-in. csg.; W.O.C.

Ed Parson No. 1 Olson, C SW SW sec. 31-2-8w. Tstd. mud, wtr. and S.O.; sd., odor oil and gas 6,856 ft.; T.D. 7,003 ft.; S.D.

Tillman County

Indian Terr. Ill. Oil Co. No. 1 Hatler, C SW NE sec. 32-2s-17w. T.D. 5,169 ft.; P.B. to 4,525 ft.; swbd. 63 B.O., no wtr. in 24 hrs. on Feb. 15.

Lynn Oliver No. 1 Rilling, SE SE NW sec. 22-1s-15w. Drlg. 1,347 ft.

Shirley Clum et al No. 1 Moricle, NW NW SE sec. 16-4s-14w. T.D. 2,775 ft.; S.D.

ARKANSAS

Clark County

Pat Carlin et al No. 1 Bierne, NE SE NE sec. 22-10s-12w. M.I.M.

John G. Wooten No. 1 Z. T. Sparkman, sec. 1-11-20. 7-in. cmtd. 560 ft.; arg. test.

Cleveland County

J. R. Lockhart No. 1 Ida Robertson, SE sec. 36-10-11w. Drlg. 3,224 ft.

Dallas County

Walter Lowns No. 1 G. Atkinson, NE NW SE sec. 7-10-13. T.A. 2,763 ft.

Grant County

Wallace & Staples No. 1 W. F. Davis, SE SE NW sec. 23-6-15. Jnkd. first hole; T.D. 2,580 ft.; skidded rig 150 ft. SE; R.U.

Hempstead County

Birdwell et al No. 1 Duckett, SW NW SW sec. 24-13-24. S.D. 125 ft.; M.I.R.

Root Pet. Co. No. 1 D. F. Jones, 330 ft. S and W, NE SW NE sec. 16-13-23. Cg. blue sh. 4,513 ft.

Root Pet. Co. No. 1 Lucey, E. Drake, SE SE NW sec. 24-14s-24w. Drlg. 1,535 ft.

Shephert & Todd et al No. 1 Smith, NW SW SE sec. 11-11-25. R.U.

Lafayette County

A. M. Neeley No. 1 Meek, NE NE NW sec. 35-19-25. Drlg. 2,823 ft.

Little River County

M. E. Sanderson No. 1 Pinning, sec. 6-13-30. S.D. 500 ft.

Joe Strahan No. 1 Dierks, SW SE sec. 21-12-28. Drlg. 1,902 ft.

Miller County

Erwin & Leach et al No. 1 M.&P. Bank, NE SE SE sec. 18-15-26. Loc.

Nevada County

Benedum & Trees No. 1 Block, NE NE SE sec. 9-14-20. Drlg. 3,916 ft.

Benedum & Trees No. 2 C. C. Fincher SW SW NE sec. 10-14-20. T.D. 1,260 ft.; W.O.S.R.

Benedum & Trees No. 4 C. C. Fincher, SE SW NE sec. 10-14-20.

Benedum & Trees No. 4 Grove, SE SW NW sec. 10-14-20. Drk.

Benedum & Trees No. 5 Grove, NE SW NW sec. 10-14-20. T.D. 2,138 ft.; W.O.S.R.

Benedum & Trees No. 6 Grove, SW NE NW sec. 10-14-20. T.D. 1,253 ft.; H.F.O.; W. O.S.R.

Benedum & Trees No. 7 Grove, NW SW NW sec. 10-14-20. Drk.

Benedum & Trees No. 8 Grove, SW SW NW sec. 10-14-20. Drk.

Benedum & Trees No. 9 Grove, NE NE SW sec. 10-14-20. Drk.

Benedum & Trees No. 1 Mary Jackson, NE NW NE csc. 9-14-20. T.D. 1,207 ft.; tstg.

Berry Asphalt Co. No. 1 J. Haynie, NE NE SE sec. 6-14-20. Loc.

J. C. Buckbee No. 1 Wortham, SW SW NW sec. 29-13-21. T.D. 2,340 ft.; T.A.

John R. Lewis No. 1 W. Haynie, SW SW NE sec. 5-14-20. Est. 15,000,000 ft. gas; 200 bbls. oil; S.D. 1,169 ft.; W.O.

W. E. Stewart No. 1 Mendenhall, cen. SE NW NE sec. 1-14-20. 10-in. cmt. 104 ft.; S.D.

Steel & Warmack No. 1 Wm. Haynil, SE SE NW sec. 6-14-21. T.D. 1,183 ft.; W. O.S.R.

Ouachita County

Lion Oil Co. No. 1 Blanch Levey, C W½ SW NW sec. 21-15-15. Cg. 4,867 ft.

J. D. Reynolds No. 2 P. C. Grayson, Lot 4, Blk. 10, Stephens Sur., sec. 21-15-19. Bailing; T.D. 1,508 ft.

Pope County

Arkansas-La. No. 1 Smith, sec. 10-8n-21w. Drlg. 4,472 ft.

Sevier County

C. J. Benkley No. 1 Luther Tabler, NW NE NE sec. 14-10s-29w. Drlg. 4,566 ft.

Union County

Dietrich et al No. 1 Aaronson, NE SW NE sec. 3-18-16. R.U. and W.O.

Lion Oil No. 1 Morgan, sec. 18-18-17. O.W. D.D: (Formerly Phillips Pet. Co.) Washing to bottom to D.D.

Fenn-Ark. Corp No. 1 W. N. Raulston, 320 ft. S and E, NW NW SE sec. 12-17-14. Cg. oil sd.; arg. set csg.; T.D. 2,783 ft.

S. H. A. Oil Corp. No. 1 H. D. Warren, NE SW SW sec. 10-17-14. Drlg. out cmt. 3,342 ft. and W.O.S.R.; T.D. 3,342 ft.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo-Rodessa

J. W. Anson No. 1 N. S. Spearman, NW SE sec. 14-23-15. Drlg. 2,955 ft.

J. Edw. Jones No. 1-B Sharp, 297 ft. N, 151 ft. W, C sec. 4-23-16. Rg. 6,020 ft.

Lyons & Neely No. 1 Noel, SE cor. sec. 8-23-15. Drlg. 5,543 ft.

Lyons & Neely No. 2 Noel, SW SE SE sec. 8-23-15. Drlg. 2,990 ft.

Magnolia Pet. Co. No. 11-A Caddo Lvy. Bd., SW cor. sec. 21-23-16. Drlg. 4,448 ft.

Magnolia Pet. Co. No. 12-A Caddo Lvy. Bd., SE cor. sec. 21-23-16. Comp.; flw. 22 B.P.H.; T.D. 5,980 ft.

R. W. Norton No. 1 L. C. Harden, NE sec. 20-23-16. 9-in. cmtd. 2,107 ft.; W.O. C.S.

R. W. Norton No. 1 Payne, C SE SE sec. 27-23-16. Cg. 8,132 ft.

R. W. Norton No. 3 Starke, 660 S and W C sec. 16-23-16. Drlg. 4,944 ft.

Standard Oil of La. No. 1 Arimstead Comm., SW SW SE sec. 4-23-16. R.U.

Standard Oil of La. No. 2 Armistead Comm., SE SE SW sec. 4-23-16. Drlg. 451 ft.

Standard Oil No. 2 J. R. Harden, NE NW NE sec. 16-23-16. Drlg. 4,645 ft.

Standard of La. No. 1 Emma J. Parker, NE SE NW sec. 9-23-16. Drlg. 5,291 ft.

United Gas No. 1-A Mitchell, 656 ft. N and W, SE cor. sec. 17-23-16. Drlg. 2,385 ft.

United Gas Co. No. 4 W. M. Mitchell, NW cor. sec. 20-23-16. Drlg. 3,040 ft.

United Gas Co. No. 27 Rodessa O. & L. Co., NE NW sec. 15-23-16. Drlg. 5,324 ft.

United Gas No. 1 Stephens, 655 ft. S and W, NE sec. 20-23-16. Comp.; flw. 22 B. P.H.; T.D. 5,915 ft.; P.B. from 6,018 ft.

United Gas No. 5 Young, NW sec. 27-23-16. Loc.

N. LOUISIANA WILDCATS

Bienville Parish

Lide & Greer No. 1 Smelley, 220 ft. N, 160 ft. W, SE SW NE sec. 13-16-5. Cg. 7,143 ft.

McDowell et al No. 1 Locke, NE cor. sec. 9-15-10. S.D. 1,965 ft.

Seaboard No. 1 McGee, 660 ft. N and E, C sec. 3-16-3. Cg. 7,834 ft.

Bossier Parish

Ark.-La. No. 1 W. H. Davis, 660 ft. S, 1,270 ft. E, NW NE NW sec. 8-17-11. T.D. 4,450 ft.; reacidizing.

Arkansas-La. No. 1 R. Hardeman, SE cor. sec. 6-17-11. Drlg. 1,865 ft.

Arkansas-La. No. 1 Tom Wilson, SW sec. 8-17-11. Loc.

La. Pet. Corp. et al No. 1 Edwards Est., NW SW sec. 5-17-11. Cg. 4,360 ft.

Haynes Drlg. Co. No. 1 A. J. Murff, NE SE sec. 35-17-12. Drlg. 300 ft.

Tidwell et al No. 1 Natting, sec. 15-22-14. T.D. 2,954 ft.; S.D.

Triangle Drlg. Co. No. 1-I Skannal, NE cor. sec. 22-17-12. T.D. 5,150 ft.; tstg.

Triangle No. 1-H Skannal, SE SW SW sec. 23-17-12. 9-in. cmtd. 2,581 ft.; W.O. C.S.

United Gas No. 1 H. G. Freeman, SE cor. sec. 15-17-12. T.D. 5,130 ft.; acidzg

United Gas No. 1 Henderson, NE cor. sec. 36-17-12. Drlg. 1,422 ft.

United Gas No. 1-H A. C. Skannal, NE SE sec. 26-17-12. 7-in. cmtd. 5,144 ft.; W.O.C.S.

Caddo Parish

Paul Cooper No. 1 Rodgers, NW SW SW sec. 11-20-15. T.D. 2,215 ft.; W.O.S.R.

W. D. Chew No. 3 U. S. Govt., NW sec. 5-20-16. 8-in. cmtd. 942 ft.; W.O.C.S.

C. C. Chews No. 3 Pender, SW NW SW sec. 11-20-15. Drk.

Custer Oil Co. No. 1 Wemple, N½ NW sec. 14-20-15. S.D. 1,650 ft.; rig rep.

DeMaggo et al No. 1 Huckaby, SE NE SE sec. 26-22-16. T.D. 1,137 ft.; tstd. dry; arg. D.D.

Gulf Ref. Co. No. 1 E. P. Hatcher, 660 ft. N and E, SW cor. SE¼ sec. 11-17-15. Cg. 8,715 ft.

B. F. Laney No. 1 Taylor, SW SE SW sec. 17-21-14. S.D. 904 ft.

F. L. Luckett No. 1 Connell, SW NE sec. 10-20-15. 6-in. cmtd. 2,174 ft.; T.D. 2,203 ft.; blg. to test.

Robson Oil Properties, Inc., No. 1 Cupples, NE sec. 24-16-13 (formerly Falcon Oil Co.). R.U. to D.D.; T.D. 4,000 ft.

Rodgers et al No. 1 Thompson, NW SW SW sec. 11-20-15. Stg. 6-in.; T.D. 2,178 ft.

Stanolind No. 116 Dillon, SE SE sec. 14-21-15. 7-in. cmtd. 1,492 ft.; T.D. 1,695 ft.; W.O.C.S.

Stanolind No. 117 Dillon, NE SE sec. 14-21-15. Drlg. 125 ft.

J. Thompson No. 1 Gamm, NE SW NW sec. 35-21-15. Tstg. 2,225 ft.

Claiborne Parish

Lisbon Oil Co. No. 1 J. W. Burgess, NE SE NE sec. 3-20-5w. R.U.

Lyons & Neely No. 1 H. E. Patton, NE NW SW sec. 36-21-5w. R.U.

Max Hirsch et al No. 1 C. O. Ferguson, 3,640 ft. N, 1,000 ft. E, SW cor. sec. 29-22-6w. Cg. 5,716 ft.

Ray P. Oden No. 1 W. H. Patton, SW SE SE sec. 36-21-5w. Drlg. 300 ft.

Red Iron Drlg. Co. No. 1 H. E Patton, S½ SW NE sec. 36-21-5w. Drk.

Standard Oil of La. No. 1 Baker, 660 S&E NW sec. 27-19n-7w. M.I.M.

United Gas et al No. 1 R. Simms, NW cor sec. 32-20-5w. Comp.; flw. 12,000,000 ft. gas; T.D. 5,714 ft.

De Soto Parish

Benedum & Trees No. 1 Clifton, NE NW sec. 33-13-12. 13-in. cmtd. 1,010 ft.

Chamberlin et al No. 1 Lanier, 280 ft. N and E, SW NE sec. 29-11-11. R.U.

Gulf Ref. Co. No. 36-A Jenkins, SE cor. sec. 2-12-12. Arg. set 7-in.; T.D. 2,389 ft.

Peral Oil Co. No. 1 Joyner, SE NW SW sec. 28-11-13. Cmtd. 8-in. 2,885 ft.; T.D. 2,897 ft.; prep. tstg.

Rio Rajo Oil Co. No. 7 Prudhomme, SE cor. sec. 20-12-11. Drlg. 1,400 ft.

Stillers et al No. 2 Jenkins, 330 ft. S and W, NE SE NW sec. 35-13-12. S.D. 2,503 ft.; fuel.

Grant Parish

Tri State Lse. & Dev. Co. No. 1 Edenborn Est., NE SE SE. R.U.

LaSalle Parish

Lee Oil Corp. No. 1 Tullos, 150 ft. S and W NE NE sec. 26-10-1e. R.U.

Placid Oil Co. No. 3 La. Cen. Lbr. Co., NE SE sec. 8-10-4e. Drlg. 600 ft.

Urania O. & G. Co. No. 1 Urania, NW sec. 7-10-2. T.D. 1,403 ft.; rng. csg.

Ouachita Parish

United Gas No. 2 Morris, SE sec. 36-19-3e. Loc.

United Carbon No. 7 Neston, NE cor. sec. 32-19-4e. Cmt. 6-in. 2,187 ft.; W.O.C.S.

Red River Parish

Perla Oil Co. No. 1 DeLong, 330 ft S and E, C sec. 23-12-10. Fsg. 2,800 ft.

Richland Parish

Gulf Ref. Co. No. 15 R. R. Rhymes et al, sec. 32-17-6e. Drlg. 9,411 ft.

Sabine Parish

Blue Lake Oil Co. No. 1 Delaney & Wheless, NW SW sec. 31-9-13. S.D. 2,037 ft.

Earl F. Fox No. 1 Blankenship, NE SE NW sec. 13-9-12. T.D. 3,305 ft.; S.O.; arg. test.

Kirk-Green-Way Inc. No. 1 Whitney Corp., NW NE sec. 8-9-13. R.U.

Posey Sisters Oil Co. No. 3 Burkett, NE cor. sec. 10-9-13. S.D. 3,234 ft.

Power Oil Co. No. 1 Belton, 990 W. 330 S NE sec. 31-9-13w. Loc.

Prod. O. & G. Co. No. 1 Lynch, SW NE SW sec. 29-9-13. S.D. 1,608 ft.

Willis & Dowden No. 1 Lynch, SW NE SW sec. 29-9-13. T.D. 1,608 ft.; arg. tst.

Union Parish

So. Carbon Co. No. 17 Grayling, SW cor. sec. 21-21-4e. R.U.

So. Carbon No. 18 Grayling, SE cor. sec. 20-21-4e. Loc.

Webster Parish

Magnolia Pet. Co. No. 5 J. Cox, SW SE sec. 23-21-10. Comp.; flw. 280 bbls. distl. in 15 hrs.; T.D. 8,115 ft.; P.B. from 8,635 ft.

Ohio Oil Co. No. 1 S. P. D. Coyle, NW SE SW sec. 23-21-10. Drlg. 3,233 ft.

Ohio Oil Co. No. 2 R. M. Coyle, SE sec. 22-21-10. Drk.

Ohio Oil Co. No. 2 A. H. Gray Acct. No. 2, NW sec. 26-21-10. Drlg. 4,177 ft.

Ohio Oil Co. No. 2 A. J. Hodges, NE NW SW sec. 23-21-10. Drlg. 3,568 ft.

Red Hawk Oil Co. No. 1 Mayfield, sec. 3-23-9. T.D. 2,802 ft.; pulled drk. in; W.O.

Standard Oil Co. of La. No. 1 E. Firdecker, 1,320 ft. E. 1,316 ft. S, NW cor. sec. 2-17n-9w. Drlg. 6,803 ft.

Tide Water No. 1 L. Pipes, NE SE sec. 10-18-10. Cg. 6,680 ft.

United Gas No. 2 Davis, 660 ft. S and E, NW cor. sec. 23-21-10. Drlg. 8,308 ft.

United Gas No. 1 Mixon, SE SW sec. 22-21-10. Cg. 8,191 ft.

Woodley Pet. Co. No. 4-B Gray, NE NE sec. 27-21-10. Drlg. 4,846 ft.

SOUTH LOUISIANA FIELDS

Ansela Butte—St. Martin Parish

Stanolind O. & G. Co. No. 1 Patin, sec. 46-9s-5e. 13⅜-in. csg. 1,514 ft.; T.D. 5,430 ft. (cor.); P.B. 2,658 ft.; drlg. sd. 5,217 ft.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 13 State, sec. 17-22s-18e. Drlg. salt 4,683 ft.; abd.

Bayou Bouillion—Iberville Parish

S. C. Yingling No. 1-A State, sec. 13-9s-8e. T.D. 3,272 ft.; oil sd; rng. csg.; no report.

Bayou Mallett—Acadia Parish

Superior Oil Prod. Co. No. 5 Breelley, sec. 52-7s-1e. R.U.

Black Bayou—Cameron Parish

Shell Pet. Corp. No. 37 Watkins, sec. 8-12s-12w. Dredging canal.

Cankton—St. Landry Parish

Superior Oil Prod. Co. No. 1 Brasseaux, sec 24-8s-8w. R.U.

Caillou Island—Terrebonne Parish

Texas Co. No. 20 State, sec. 18-23s-20e. Drlg. sdy. sh. 3,569 ft.; no report.

Texas Co. No. 28 State, sec. 18-23s-20e. T.D. 4,584 ft.; 7⅝-in. csg. 4,584 ft.; W. O.C.

Texas Co. No. 33 State, sec. 20-23s-20e. T.D. 4,830 ft.; P.B. and strkd.; drlg sh. and L. 4,180 ft.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 2 Laws Realty Co., sec. 30-13s-10e. T.D. 7,194 ft.; 7,-in. csg. 7,180 ft.; rng. screen.

Pan American Prod. Co. No. 1 South Coast Corp., sec. 30-13s-10e. S.D. 6,934 ft.; high wtr.

Choctaw—Iberville Parish

Standard Oil Co. No. 9 Myrtle Grove, sec. 53-9s-11e. Drlg. sdy. sh. 3,000 ft.

Cameron Meadows—Cameron Parish

Burton Sutton Oil Co. No. 16 Sch. Ld., sec. 16-14s-13w. Set 10¾-in. csg.; T.D. 4,851 ft.; P.B. 3,650 ft.; W.O.C.

Burton Sutton Oil Co. No. 18 School Ld., sec. 16-14s-13w. Drk.

Magnolia Pet. Co. No. 19 Cameron Meadows, sec. 16-14s-13w. T.D. 4,714 ft.; recvd. 2,-500 ft. of P.L.O. on D.S.T.; 9⅝-in. csg. 4,694 ft.; P.B. 4,708 ft.; tested oil and wtr. by heads.

Darrow—Ascension Parish

Humble O. & R. Co. No. 4 Community, sec. 33-2e. Drk.

Humble Oil & Ref. Co. No. 14 Community, sec. 29-10s-2e. T.D. 5,613 ft.; 7-in. csg. 5,612 ft.; I.P. 24 B.P.H. through ⅛-in. choke.

Dog Lake—Terrebonne Parish

Texas Co. No. 4 State, sec. 5-22s-16e. T.D 5,342 ft.; sdtrkd. at 5,185 ft.; T.D. 6,147 ft.; P.B. and sdtrkd.; drlg. sh. and L. 3,996 ft.

Four Isle—Terre Bonne Parish

Texas Co. No. 8 State. Drlg. sd. 8,384 ft.

Fausse Point—Iberia Parish

Texas Co. No. 2 State, sec. 35-11s-8e. 7-in. csg. 6,444 ft.; cd. salt 7,151-57 ft.; 1,021 ft. of 4⅝-in. csg. 7,157 ft.; perf. csg. 6,303-6,553 ft.; rng. liner; tstg.

Garden Island—Plaquemines Parish

Texas Co. No. 23 State, sec. 37-23s-32e. 18⅝-in. csg. 541 ft.; drlg. sh. and L. 4,-469 ft.

Gillis—Calcasieu Parish

Fohs Oil Co. No. 17 O. H. Castle, sec. 14-9s-8w. Drlg. sdy. sh. 5,835 ft.

Texas Co. No. 12 Nickerson, sec. 1-9s-8w. Drk.

Union Sulphur Co. No. 12 Barbe, sec. 1-9s-8w. Drlg. sh. and sd. 8,976 ft.

Union Sulphur Co. No. 13 Barbe, sec. 1-9s-8w. T.D. 1,431 ft.; W.O.C.

Union Sulphur Co. No. 14 Barbe, sec. 1-9s-8w. Loc.

Union Sulphur Co. No. 1 McIver, sec. 14-9s-8w. Cored oil sd. 5,421-31 ft.; 7-in. csg. 5,421 ft.; tstg.

Union Sulphur Co. No. 11 Powell, sec. 12-9s-2w. T.D. 6,673 ft.; I.P. 234 B.P.D. through ⅛-in. ck.

Union Sulphur Co. No. 12 Powell Lbr. Co., sec. 12-9s-8w. R.U.

Union Sulphur Co. No. 13 State, sec. 13-9s-8w. Drk.

Union Sulphur Co. No. 15 State, sec. 12-9s-8w. Drk.

Hackberry—Cameron Parish

W. T. Burton Oil Co. No. 1 R. L. Lewis, sec. 22-12s-10w. T.D. 4,172 ft.; 7-in. csg. 4,155 ft.; I.P. 430 B.P.D. through 3/16-in. ck.

W. T. Burton No. 1 Rosella Vincent, sec. 22-12s-10w. R.U.

Gulf Oil Corp. No. 23 Erwin, sec. 12-12s-10w. R.U.

Independent Oil Co. No. 1 Sanner, sec. 29-12s-10w. T.D. 1,778 ft.; rng. csg.

Stanolind O. & G. Co. No. 6 Carter, sec. 22-12s-10w. Drlg. sh. 577 ft.

Stanolind Oil & Gas Co. No. 1 J. H. Duhon, sec. 27-12s-10w. Cg. sd. 3,856 ft.

Stanolind O. & G. Co. No. 25-B Gulf Land fee, sec. 15-12s-10w. Drk.

Stanolind O. & G. Co. No. 1 M. J. Muller, sec. 23-12s-10w. 7⅝-in. csg. 4,617 ft.

Stanolind O. & G. Co. No. 18 School Land, sec. 16-12s-10w. Spudded.

Superior Oil Prod. Co. No. 1 C. Hebert Estate, sec. 33-12s-10w. Drlg. sh. 6,029 ft.

Sutton Joint Interest No. 1 Ellender, sec. 22-12s-10w. R.U.

Sutton Joint Interest No. 1 Portie, sec. 32-12s-10w. S.D. oil sd. 4,396 ft.; 7-in. csg. 4,388 ft.; I.P. 528 B.P.D. through ¼-in. ck.

Texas Co. No. 20 State, sec. 12-12s-10w. Drlg. sh. 7,530 ft.

Union Sulphur Co. No. 42 Walkins, sec. 13-12s-10w. T.D. 2,990 ft.; 7-in. csg. 2,-981 ft.; comp.; no gauge.

Iowa—Jefferson-Davis Parish

Shell Pet. Corp. No. 22 Heyd, sec. 13-9s-7w. Loc.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 7 Banta, sec. 40-13s-9e. T.D. 6,646 ft.; 7-in. csg. 6,635 ft.

Herton Oil Co. No. 4 Carter, sec. 38-13s-9e. T.D. 7,055 ft.; I.P. 600 B.P.D. through ¼-in. ck.

A. U. Morrison No. 1 Matilda Plantation, sec. 70-13s-9e. Drlg. sdy. sh. 7,240 ft.

Philtop O. & G. Co. No. 1 Eaves, sec. 70-13s-9e. Drlg. sd. and sh. 4,520 ft.

Jennings—Acadia Parish

A. C. Glassell et al No. 1 J. Trusel, sec. 42-9s-2w. Drlg. sh. 3,782 ft.

Lake City Oil Co. No. 2 Jennings Synd., sec. 46-9s-2w. Drlg. sh. 3,530 ft.

T. C. Markly No. 1 Gourney, sec. 42-9s-2w. Drlg. sh. 1,530 ft.

Shell Pet. Corp. No. 2 Community, sec. 40-9s-2w. T.D. 7,185 ft.; tried to blow-out.

Stanolind O. & G. Co. No. 18 Houssiere-Latrelle, sec. 47-9s-2w. T.D. 5,453 ft.; rmg.

Superior Oil Prod. Co. No. 1 Iowa-Jennings, sec. 41-9s-2w. Sandstone 6,243 ft.

Superior Oil Prod. Co. No. 2 Leckelt, sec. 42-9s-2w. Drlg. sh. 6,011 ft.

Lafitte—Jefferson Parish

Texas Co. No. 6 Lafitte, sec. 20-17s-24e. T.D. 1,771 ft.; lost returns; moved drlg. barge 135 ft. N of first hole; 13⅜-in. csg. 1,988 ft.; W.O.C.; drlg. sh. 2,764 ft.

Texas Co. No. 6 Rigolettes, sec. 39-17s-24e. Drlg. sh. 7,210 ft.

Texas Co. No. 1 State-Bayou Norman, sec. 28-17s-24e. Loc.

Lake Barre—Terrebonne Parish

Texas Co. No. 37 Lake Barre-State. Drlg. sd. 10,209 ft.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp. No. 6 LaFourche, sec. 11-8s-25e. Drlg. sh. 5,229 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 15 State, sec. 17-23s-18e. Drlg. sd. 6,944 ft.

Leesville—Lafourche Parish

Carter-Michael No. 1 E. S. Bernard, sec. 26-21s-22e. Drlg. sd. 6,135 ft.

Gulf Oil Corp. No. 1-A City of New Orleans, sec. 35-21s-22e. Drlg. sd. 5,487 ft.

Gulf Oil Corp. No. 4 City of New Orleans, sec. 25-21s-22e. T.D. 5,945 ft.; P.B. 1,078 ft.; T.D. 3,691 ft.; making D.S.T.

Texas Co. No. 58 Leesville, sec. 27-21s-22e. 10¾-in. csg. 765 ft.; T.D. 4,346 ft.; I.P. 143 B.P.D. through ¼-in. ck.

Texas Co. No. 60 Leesville, sec. 27-21s-22e. T.D. 4,203 ft.; 7⅝-in. csg. 3,130 ft.; completing.

New Iberia—Iberia Parish

Wm. Hellis No. 6 Bernard, sec. 54-12s-7e. T.D. 4,562 ft.; 7-in. csg. 4,466 ft.

Wm. Hellis No. 7 Bernard, sec. 54-12s-7e. Drk.

Wm. Hellis No. 4 Boliver, sec. 56-12s-7e. R.U.

Wm. Hellis No. 4 Bullock & Burke, sec. 25-12s-7e. T.D. 4,505 ft.; P.B. and sdtrk.; drlg. sh. 4,344 ft.

Wm. Hellis No. 3 Schwing, sec. 57-12s-7e. Drlg. sh. 1,200 ft.

Kitos et al No. 3 Sealy, sec. 36-12s-7e. 9⅝-in. csg. 874 ft.; abd. 5,642 ft.

Texas Co. No. 3 Bryant, sec. 25-12s-7e. Loc.

Texas Co. No. 1 Clementine, sec. 25-12s-1e. Drlg. sd. and L. 6,512 ft.

Texas Co. No. 1 Dohoe, sec. 26-12s-7e. Drk.

Texas Co. No. 3-B Hanzen, sec. 54-12s-7e. Oil sd. 4,818-27 ft.; T.D. 5,034 ft.; I.P. 504 B.P.H. through ¼-in. ck.

Texas Co. No. 4-B Hanzen, sec. 54-12s-1e. T.D. 4,755 ft.; 7-in. csg. 4,665 ft.; W.O.C.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 3 Cormier, sec. 4-6s-5e. Drlg. sh. 6,420 ft.

Roanoke—Jefferson Davis Parish

Shell Pet. Corp. No. 6 Kratzer, sec. 12-9s-4w. 10¾-in. csg. 2,454 ft.; cg. sd. 9,-835 ft.

Sorrento—Ascension Parish

Pan American Prod. Co. No. 8 United Land, sec. 22-10s-4e. R.U.

Sorrento Oil Co. No. 1 Bernard, sec. 9-19s-14e. S.D. 6,262 ft.

Tri-State Dev. Co. No. 1 Duplessis, sec. 69-10s-2e. Drk.

Starks—Calcasieu Parish

J. R. Turnbull No. 1 Industrial Lbr. Co., sec. 20-9s-12w. S.D. 6,433 ft.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 839 fee, sec. 30-9s-10w. 10¾-in. csg. 1,010 ft.; T.D. 3,932 ft.; 7-in. csg. 3,923 ft.; I.P. 250 B.P.D. through ¼-in. ck.

Union Sulphur Co. No. 840 fee, sec. 29-9s-10w. Drk.

Union Sulphur Co. No. 841 fee, sec. 29-9s-8w. T.D. 4,456 ft.; 7-in. csg. 4,436 ft.; P.B. 4,440 ft.; tstd. S.W.; sdtrkng. 4,195-4,210 ft.

Union Sulphur Co. No. 842 fee, sec. 29-9s-10w. Drlg. sh. 5,430 ft.

Union Sulphur Co. No. 843 fee, sec. 30-9s-10w. T.D. 5,147 ft.; P.B. and sdtrk.; drlg. sh. 5,012 ft.

Tepetate—Acadia Parish

Continental Oil Co. No. 9-A Homeseekers Dev. Co., sec. 29-7s-2w. T.D. 8,323 ft.; P.B. to sdtrk.

Continental Oil Co. No. 11-A Homeseekers Dev. Co., sec. 29-7s-2w. T.D. 8,318 ft.; I.P. 170 B.P.D. through 5/32-in. ck.

Continental Oil Co. No. 1-D Homeseekers Dev. Co., sec. 29-7s-2w. T.D. 8,342 ft.; P.B. to 3,600 ft.; drill stem stuck; prep. to sdtrk.

Continental Oil Co. No. 2 P. O. Johnson, sec. 30-7s-2w. T.D. 8,317 ft.; W.O.C.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 2 Harang, sec. 8-17s-20e. Drlg. sh. 6,430 ft.

Pan American Prod. Co. No. 3 Harang, sec. 8-17s-20e. Drlg. 850 ft.

White Castle—Calcasieu Parish

Shell Pet. Corp. No. 4 Shingle, sec. 12-11s-12e. Cg. sh. 8,774 ft.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. S.D. 5,047 ft.; washing to bottom.

Humble O. & R. Co. No. 1 Nordyke, sec 23. 9⅝-in. csg. 6,843 ft.; drlg. sh. 8,-121 ft.

Allen Parish

Humble O. & R. Co. No. 3 Bel, located in cratered hole, sec. 26-6s-7w. 10¾-in. csg. 165 ft.; T.D. 2,870 ft.; 7-in. csg. 2,-766 ft.; shot well; failed to stop flwg. S.W.; S.D.

Avoyelles Parish

Coastal Mineral Dev., Inc., No. 1 Purdy-Hess, sec. 25-2n-3e. Drk.

George Conover No. 1 Purdy-Hess, sec. 25-2n-3e. Drk.

Frost Oil Co. No. 1 Hines Lumber Co. sec. 3-3n-4e. Drk.

Calcasieu Parish

D. D. Oil Co. No. 1 Lutcher Moore, sec. 11-8s-13w. Drlg. sh. 7,005 ft.

Wilfred Lahaye No. 1 Bass, sec. 9-10s-12w. S.D. 80 ft.

Cameron Parish

Magnolia Pet. Co. No. 1 Gray Hrs., sec. 8-15s-14w. T.D. 6,357 ft.; drlg. sh. 5,-416 ft.

Pure Oil Co. No. 1 Mallard Bay, sec. 21-13s-3w. 18⅝-in. csg. 1,499 ft.; 9⅝-in. csg. 7,906 ft.; T.D. 10,146 ft.; drill stem stuck; cutting drill pipe.

Southern Sulphur Co. No. 2 State, sec. 29-15s-10w. S.D. 1,410 ft.

Union Sulphur Co. No. 1 J. O. Hebert, sec. 18-12s-8w. Drlg. sh. and L. 5,074 ft.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Vingnes, sec. 46-8s-2e. T.D. 6,690 ft.; D.S. stuck.

Cavalier Oil Co. No. 1 Young, sec. 61-4s-1w. Abd. loc.

Evangeline Parish

Belle Chenney Springs Oil Co. No. 1 Belle Springs Land Dev. Co., sec. 10-2s-1w. S.D. 300 ft.

Continental Oil Co. No. 1 Pardee Lbr. Co., sec. 18-4s-1w. Drk.

La. Crusader Oil Co. No. 1 Hattie Haas, sec. 2-3s-5e. Drlg. sh. 5,340 ft.

East Feliciana Parish

Barnett Pet. Corp. No. 1 Tullis, sec. 34-2s-1w. T.D. 1,043 ft.; drlg. plug.

Cavalier Oil Co. No. 1 Mells, sec. 58-4s-2w. Drlg. sdy. sh. 4,810 ft.

East Feliciana Oil No. 1 West & Budding, sec. 37-1s-1w. Spudded 15 ft. and S.D.

Iberia Parish

Jefferson Lake Oil Co. No. 414 State Lake Pigneur, Twp. 12s-5e. Top salt 990 ft; set 10¾-in. csg. 5,095 ft.; drlg. L. 6,-225 ft.

Texas Co. No. 1-B State, Vermilion Bay sec. 16-15s-6e. T.D. 10,622 ft.

Jefferson Parish

Triangle Oil Co. No. 1 Conroe, sec. 138 12s-11e. T.D. 2,461 ft.; drill stem stuck.

Jefferson Davis Parish

W. M. Naylor No. 2 Johnson-Bourdreaux, sec. 39-10s-3w. Drlg. sh. 9,006 ft.

Shell Pet. Corp. No. 1 Joe Sturdivant, sec. 25-10s-4w. 10¾-in. csg. 2,616 ft. T.D. 9,747 ft.; fsg.

Stanolind O. & G. Co. No. 1 Calcasieu Natl. Bank, sec. 28-7s-3w. Drlg. sh. 8,-688 ft.

Stanolind O. & G. Co. No. 1 United Life Accident Co., sec. 16-11s-5w. M.I.R.

Lafourche Parish

Fohs Oil Co. No. 1 State Lake, sec. 61-17s-19e. R.U.

Wm. Heils No. 1 City of New Orleans sec. 19-23s-23e. Top salt 7,463 ft.; electrical test; showed oil; T.D. 8,012 ft.; P.B. to 5,800 ft. to sdtrk.

Livingston Parish

Coastline Oil Co. No. 1 Addison Trust Co. sec. 7-7s-3e. Drk.

Plaquemines Parish

Gulf Oil Corp. No. 1 Bay-Adams, sec. 25-32s-19. S.D. 3,567 ft.

Tide Water Oil Co. No. 2 Manhattan Fruit Co., sec. 34-21s-22e. T.D. 4,763 ft.; P.B. 1,920 ft.; cd. sd. showing oil 6,429-38 ft.; drlg. sh. 6,916 ft.

Rapides Parish

R. D. Webb No. 1 A. M. Brasher, sec. 23-4n-2w. Drlg. 240 ft.

St. Bernard Parish

Gulf Oil Corp. No. 1 Lake Lery, sec. 25-14s-14e. Drlg. sh. 5,037 ft.

Southern Sulphur Co. No. 2 State Lake Borgne, sec. 38-14s-15e. 13⅜-in. csg. 303 ft.; drlg. sh. 2,000 ft.

St. Landry Parish

Superior Oil Prod. Co. No. 2 A. Savoie, sec. 26-8s-3e. 11¾-in. csg. 1,180 ft.; cg. sh. 5,980 ft.; T.D. 6,588 ft.; 7-in. csg. 6,588 ft.; perf. csg. 5,855-88 ft.; flowing into tanks; showed oil, gas and S.W. in 6 hrs.

St. Martin Parish

Texas Co. No. 9 St. Martin, sec. 21-8s-7e. 18⅝-in. csg. 106 ft.; drlg. sh. and L. 8,065 ft.

Texas Co. No. 3 State, sec. 14-10s-9e R.U.

St. Mary Parish

Texas Co. No. 1 Horse Shoe Bayou, sec. 40-17s-9e. Drlg. sh. and L. 10,785 ft.

Texas Co. No. 1 State-Bateman Lake, sec. 21-16s-12e. Loc.

Terrebonne Parish

Humble O. & R. Co. No. 1 H. J. Ellender sec. 23-19s-19e. 9⅝-in. csg. 8,735 ft.; drlg. sd. 9,006 ft.

Shell Pet. Corp. No. 1-B Realty, sec. 18-17s-15e. T.D. 9,483 ft.; oil sd. rec. 12 bbls. of oil on drill-stem test 9,461-83 ft.; 7-in. csg. 9,457 ft.; cored to 9,493 ft.; recovered 3 ft. of gray sd. good odor; rng. screen.

Vermilion Parish

Continental Oil Co. No. 1 O. C. Hebert, sec. 20-12s-3e. T.D. 11,732 ft.; circulating with mud; well tried to blow out; fsg. for stuck D.S.; hole cleaned to 10,680 ft.; set cmt.; P.B. to 10,800 ft.; sdtrkd. at 10,800 ft.; T.D. 12,216 ft., 5-in. csg. 11,795 ft.; flowed est. 5,000,000 ft. of dry gas per day through ¼-in. ck.; C.P. 3,950 lbs.; T.P. 3,500 lbs. Tubing and csg. sanded up; recovered tubing; milled bit off of 5-in. csg. at 11,795 ft.; Cleaning out hole to test.

Drunella Oil Co. No. 1 Cardwell, sec. 41-13s-4e. S.D. 8,100 ft.; waiting orders.

TEXAS

Week Ending February 20

GULF COAST FIELDS

Raccoon Bend—Austin County

Humble O. & R. Co. No. 10 Austin College, Wm. Harvey Sur. Abd. 3,560 ft.

Humble O. & R. Co. No. 7-C A. Grawunder, W. C. White Sur. T.D. 1,150 ft.; W.O.C.

Humble O. & R. Co. No. 13-X Sherrod, W. C. White Sur. T.D. 4,100 ft., 5½-in. csg. 4,038 ft. W.O.C.

Hastings—Brazoria County

Humble O. & R. Co. No. 1 Allen, B.B.B.&C. Sur. T.D. 6,045 ft.; 7-in. csg. 6,044 ft., perf. csg. 6,000-05 ft.; I.P. 28 B.P.H. through ¼-in. choke.

Humble O. & R. Co. No. 3-B Brown, Perry & Austin Sur. Loc.

Humble O. & R. Co. No. 2 P. A. Hoidale, Lo 16, B.B.B.&C. Sur. Drlg. sh. and L. 4,192 ft.

Humble O. & R. Co. No. 1 King, H.T.&B. Sur. Drk.

Humble O. & R. Co. No. 1 C. M. Moody, Blk. 11, B.B.B.&C. Sur. Loc.

Humble O. & R. Co. No. 1 Warring-Flint, Lot 15, B.B.B.&C. Sur. T.D. 6,080 ft.; 5½-in. csg. 6,000 ft.

Navarro Oil Co. No. 2 Callahan, Lot 5, H.T.&B. Sur. No. 29. Loc.

Navarro Oil Co. No. 1 Callahan, Lot 6, H.T.&B. Sur. No. 29. Drlg. sh. and L. 5,215 ft.

South Gulf Oil Corp. No. 1 M. L. Gann, C of 10-ac. blk., Blk. 21, H.T.&B. Sur. No. 29. 10¾-in. csg. 1,800 ft.; drlg. sh. 4,830 ft.

Stanolind O. & G. Co. No. 3-A Avitts, H.T.&B. Sur. No. 29. Loc.

Stanolind O. & G. Co. No. 2 Blount, H.T.&B. Sur. No. 29. Loc.

Stanolind O. & G. Co. No. 2 Brown, Coring sh. 5,950 ft.

Stanolind O. & G. Co. No. 4 C. A. Cannon, H.T.&B. Sur. 10¾-in. csg. 1,720 ft.; T.D. 6,080 ft.; 7-in. csg. 5,878 ft.; I.P. 432 bbls. in 17 hrs. through ¼-in. choke.

Stanolind O. & G. Co. No. 1 Condon, H. T.&B. Sur. No. 29. Drlg. L. 4,032 ft.

Stanolind O. & G. Co. No. 3 Drake, H.T.&B. Sur. No. 36. T.D. 6,080 ft.; 7-in. csg. 5,934 ft.

Stanolind O. & G. Co. No. 2 T. C. Edwards, Wm. Henry Sur. Drk.

Stanolind O. & G. Co. No. 10 Ford, A.C. H.&B. Sur. 10¾-in. csg. 1,648 ft.; T.D. 6,080 ft.; running screen.

Stanolind O. & G. Co. No. 3 Law, H.T.&B. Sur. No. 36. Loc.

Stanolind O. & G. Co. No. 2 Long, H.T.&B. Sur. No. 29. Loc.

Stanolind O. & G. Co. No. 1 A. C. McKibben, H.T.&B. Sur. No. 29. Loc.

Stanolind O. & G. Co. No. 1 Miller, H.T.&B. Sur. No. 29. Drlg. sh. 2,866 ft.

Stanolind O. & G. Co. No. 3 Surface, B. B.B.&C. Sur. Drk.

Stanolind O. & G. Co. No. 8 Williams, A. C.H.&B. Sur. No. 1. Drk.

Windsor Oil Co. No. 1 Hirsch, B.B.B.& C. Sur. T.D. 6,065 ft.; comp., no gauge.

Lockridge—Brazoria County

Gulf Oil Corp. No. 1 Fred Reiss, J. W. Hall Sur. Drlg. sh. 3,140 ft.

Gulf Oil Corp. No. 1 Carrie Baker, J. W. Hall Sur. No. 68. Drlg. sh. 1,322 ft.

Shell Pet. Corp. No. 2 Ramsey State farm, J. W. Hall Sur. No. 68. Drlg. sh. 1,140 ft.

Manvel—Brazoria County

Bowles & Borsodi No. 4 Norvell Co., Inc., H.T.&B. Sur. No. 23. R.U and S.D.

Burton Drlg. Co. No. 2 Mortgage Ld. and Trust Co. Cen. Lot 102, A.C.H.&B. Sur. No. 92. T.D. 4,075 ft.; 7-in. csg. 4,067 ft.

E. A. Stone No. 1 Nichols, E. Little Sur. Drk.

Texas Co. No. 15 Belcher, H. N. Little Sur. Drlg. sd. and boulders 1,798 ft.

West Columbia—Brazoria County

Texas Co. No. 15 Abrams, George Tenille Lge. Sur. 10-in. csg. 1,156 ft.; W.O.C.

Old Ocean—Brazoria County

Harrison and Abercrombie No. 3 Bernard River, Charles Breen Sur. 9⅝-in. csg. 6,070 ft.; cmtd. 4,304 ft. of 7-in. csg. at 10,904 ft.; drlg. sd. and sh. 10,082 ft.

Heyser—Calhoun County

Humble O. & R. Co. No. 6 Elizabeth Welder, J. Maria Rios Sur. Loc.

Humble O. & R. Co. No. 5 E. H. Welder, J. M. Rios Sur. R.U.

Rumble O. & R. Co. No. 8-A P. H. Welder, J. M. Rios Sur. Drlg. sh. 1,587 ft.

Humble O. & R. Co. No. 10-B P. H. Welder, A. Sisneros Sur. T.D. 5,491 ft.; W.O.C.

Portilla Drilling Co. No. 4-C P. H. Welder, A. Sisneros Sur. Drk.

Portilla Oil Co. No. 5-C P. H. Welder, A. Sisneros Sur. T.D. 5,485 ft.; comp., no gauge.

Anahuac—Chambers County

Gulf Oil Corp. No. 5 W. Knowles, sec. 48, H.&T.C. Sur. R.U.

Gulf Oil Corp. No. 2 Pommer, sec. 40, H. &T.C. Sur. R.U.

Gulf Oil Corp. No. 3 G. C. Wilcox, sec. 48, H.&T.C. Sur. Drlg. sd. and gravel 868 ft.

Humble O. & R. Co. No. 10 Broussard-Hebert, sec. 59, H.&T.C. Sur. Drk.

Humble O. & R. Co. No. 11 Broussard-Hebert, sec. 59, H.&T.C. Sur. Loc.

Humble O. & R. Co. No. 8 Engles, sec. 50, H.&T.C. Sur. Drlg. sh. 1,286 ft.

Humble O. & R. Co. No. 7 Grippon, sec. 51, H.&T.C. Sur. Loc.

Humble O. & R. Co. No. 9 H. A. Grippon, H.&T.C. Sur., sec. 153. Drlg. sh. 7,080 ft.

Humble O. & R. Co. No. 11 Tyrell. T.D. 7,085 ft.; I.P. 656 B.P.D. through ¼-in. choke.

Humble O. & R. Co. No. 4 Shaver, sec. 53, H.&T.C. Sur. Drlg. sh. 5,440 ft.

Humble O. & R. Co. No. 10-B White, J. McGahey Sur. T.D. 7,131 ft.; W.O.C.

Navarro Oil Co. No. 1 E. Drought, H.&T.C. Sur., sec. 46. R.U.

Sun Oil Co. No. 2 White, J. McGahey Sur. T.D. 7,274 ft.; P.B. 7,141 ft.; W.O.C.

Cotton Lake—Chambers County

Kirby Pet. Co. No. 1 W. D. Haden, Chambers County Sch. Land Sur. Moving in.

Salt Dome Oil Co. No. 1-B Lawrence, S. Barrow Sur. T.D. 6,532 ft.; showed S.W. mud cut with oil and gas on drill-stem test. 7-in. csg. 6,525 ft.; setting cement retainer.

Seabreeze—Chambers County

Sun Oil Co. No. 1-A White, J. G. White Sur. No. 128. O.W.D.D.; T.D. 9,055 ft.; prepare to start up.

Sun Oil Co. No. 1-B White, Wm. Mays Sur. 18⅝-in. csg. 1,226 ft.; T.D. 6,902 ft., reaming.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 4 State, due S of Sun Oil Co. No. 1 Chambers in Turtle Bay. T.D. 6,608 ft.; 7-in. csg. 6,594 ft. I.P. 464 B.P.D. through ¼-in. choke.

Big Creek—Fort Bend County

Gulf Oil Corp. No. 73 Davis, M. Young Sur. T.D. 2,669 ft.; 7-in. csg. 2,644 ft.; I.P. 68 B.P.D. through ¼-in. choke.

Gulf Oil Corp. No. 74 T. W. Davis, M. Young Sur. Drk.

Jenal Oil Co. No. 3 Bryan et al., M. Young Sur. Spudded.

Blue Ridge—Fort Bend County

Barnett Pet. Co. No. 1-B Blakely, Lot 7, Blk. E, Drew Sur. T.D. 3,876 ft. (cor.); Well shut in after showing gas.

Orchard—Fort Bend County

Gulf Oil Corp. No. 49 J. M. Moore, Germain Immg. No. 8. 13⅜-in. csg. 2,522 ft.; drlg. sh. 3,930 ft.

Gulf Oil Co. No. 50 Moore Germain Immg. Drlg. sh. 2,674 ft. No report.

Gulf Oil Corp. No. 51 Moore, Mark Smith Sur. Drlg. sh. 1,730 ft.

High Island—Galveston County

Stanolind O. & G. Co. No. 1-B Cade, H. Denman Sur. R.U.

Stanolind O. & G. Co. No. 61 Cade, N. Fitzsimmon Sur. Bldg. drk.

Stanolind O. & G. Co. No. 60-A Cade, M. Duncan Sur. 7-in. csg. on bottom; perf. csg. 6,094-6,113 ft.; tstg.

Dickinson—Galveston County

Coast Pet. Corp. No. 5 Maco Stewart, W. K. Wilson Sur. Coring 8,200 ft.

Coast Pet. Corp. No. 6 Maco Stewart, W. K. Wilson Sur. Loc.

Humble O. & R. Co. No. 1-C Bayou Development Co., J. Sellers Sur. Loc.

Humble O. & R. Co. No. 14-A Stewart, W. K. Wilson Sur. T.D. 8,848 ft.; run. 7-in. csg.

Humble O. & R. Co. No. 15-A Maco Stewart, W. K. Wilson Sur. Loc.

Humble O. & R. Co. No. 16-A Maco Stewart, W. K. Wilson Sur. Bldg. drk.

Pure Oil Co. No. 4 J. W. Shelor, G. W. Banks Sur. Bldg. drk.

Pure Oil Co. No. 1 Sealy Hutchings, P. G. Merrett Sur. 10¾-in. csg. 1,826 ft.; W.O.C.

Sinclair Prairie Oil Co. No. 1 W. Weems, W. K. Wilson Sur. Loc.

Stanolind O. & G. Co. No. 1 Dameani, W. K. Wilson Sur. R.U.

Greens Lake—Galveston County

Sun Oil Co. No. 7 Hughes, sec. 26, W. C. M. Baker Sur. R.U.

Silsbee—Hardin County

Humble O. & R. Co. No. 1 Mrs. M. L. Kirby, G. W. Brooks Sur. Loc.

Republic Prod. Co.-Houston Oil Co. No. 5 Brooks, Geo. Brooks Sur. T.D. 6,980 ft.; 7-in. csg. 6,957 ft.; P.B. 6,965 ft.; top cement plug 6,963 ft.; I.P. 150 B.P.D. through 3/16-in. ck.; C.P. 1,100 lbs; T.P. 1,150 lbs.

Republic Prod. Co.-Houston Oil Co. No. 6 Brooks, G. W. Brooks Sur. R.U.

Republic Prod. Co.-Houston Oil Co. No. 7 Brooks, G. W. Brooks Sur. Tested 550 lbs. pressure on drill stem test 6,994-6,914 ft.; coring ahead.

Republic Prod. Co.-Houston Oil Co. No. 8 Brooks, G. W. Brooks Sur. R.U.

Republic Prod. Co.-Houston Oil Co. No. 1 Ellery, J. Ellery Sur. T.D. 6,973 ft.; swabbed oil and S.W.; P.B. to 6,965 ft.; perf. csg. 6,833-48 ft.; I.P. 295 B.P.D. through 3/16-in. ck.

Sour Lake—Hardin County

Texas Co. No. 231 fee, Stephen Jackson Lge. T.D. 1,936 ft.; P.B. 1,874 ft.; 7-in. csg 1,800 ft.; swbg.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 D. A. Oates, C. Martinez Sur., Abst. 543. Drlg. sh. and L. 6,373 ft.

Mykawa—Harris County

West Prod. Co. No. 10 W. H. Irwin, W. B. Walker Sur. Drk.

South Houston—Harris County

Stanolind O. & G. Co. Drlg. Dist. No. 16. 9⅝-in. csg. 1,474 ft.

Stanolind O. & G. Co. Drlg. Dist. No. 28. 9⅝-in. csg. 1,441 ft.

Stanolind O. & G. Co. No. 6 First Natl. Bank, Callahan and Vince Sur. Loc.

Stanolind O. & G. Co. No. 2 J. C. Kelley, H.T.&B. Sur. No. 6. 10¾-in. csg. 1,382 ft.; T.D. 4,000 ft.; 6⅝-in. csg. 3,962 ft.; W.O.C.

Tomball—Harris County

Humble O. and R. Co. No. 1 Albert Martens, G. Lamb Sur. T.D. 5,567 ft.; P.B. 5,557 ft.; 5½-in. csg. 5,566 ft.; testing.

Humble O. & R. Co. No. 2-B J. F. W. Cobb, J. Edwards Sur. Drlg. sh. 4,319 ft.

Humble O. & R. Co. No. 5 H. S. Gebhard W. Perkins Sur. Drk.

Humble O. & R. Co. No. 3 Mueller, T. A. Duclose Sur. T.D. 5,558 ft.; I.P. 22 B.P. H. through ¼-in. ck.

Shell Pet. Corp. No. 2 Beeler, J. Pruitt Sur. Drk.

Texas Co. No. 4 Ziegler, Wm. Hurd Sur. Drlg. sd. 5,520 ft.

Amelia—Jefferson County

Glenn H. McCarthy No. 3-B Longe, H. Williams Sur. R.U.

Humble O. & R. Co. No. 1 T. H. Crook, C. Williams Sur. Drk.

Humble O. & R. Co. No. 1 Industrial Investment Co., Unit 1-B, C. Williams Sur. Drk.

Humble O. & R. Co. No. 2 M. Lefler, Amelia Heights Subd., C. Williams Sur. R.U.

Humble O. & R. Co. No. 2 R. J. Peveto, R. J. Peveto Sur. Top sd. 6,760 ft.; T.D. 6,781 ft.; 7-in. csg. 6,781 ft.; W.O.C.

Big Hill—Jefferson County

Stanolind O. & G. Co. No. 1 Fitzhugh, McFaddin Sur. 10¾-in. csg. 1,861 ft.; T.D. 4,916 ft., oil sand; hole trying to heave.

Fannett—Jefferson County

Gulf Oil Corp. No. 1 Junker, W. A. Smith Sur. Drlg. sd. rock 4,866 ft.

Nome—Jefferson County

Shell Pet. Corp. No. 4 Carpenter, M. Peveto Sur. Drlg. sh. 2,600 ft.

Shell Pet. Corp. No. 4 Paggi, J. W. Kirby Sur. Top sd. 6,016 ft.; T.D. 6,055 ft.; 5-in. csg. 6,010 ft.

Sun Oil Co. No. 1 Long, J. Blair Sur. O.W.D.D.; T.D. 9,045 ft.; cutting and pulling 7-in. csg.

Sun Oil Co. No. 1 A. J. Mouboules, J. Blair Sur. 10¾-in. csg. 1,062 ft.; drlg. sh. 5,866 ft.

Cleveland—Liberty County

Gulf Oil Corp. No. 4-C R. D. McDonald, C. Smith Sur. T.D. 5,877 ft.; I.P. 421 B.P.D. through ¼-in. ck.; T.P. 700 lbs.; C.P. 1,750 lbs.

Hankamer—Liberty County

Gulf Oil Corp. No. 2-A Weiser, George Stengler Sur. R.U.

Hull—Liberty County

Eclipse Oil Co. No. 1 Barrow. T.D. 5,014 ft.; S.D.

Gulf Oil Corp. No. 22 Baldwin, J. Devore Sur. T.D. 5,239 ft.; tstg. sd. at 4,500 ft. I.P. 260 B.P.D. through ¼-in. ck.

Gulf Oil Corp. No. 23 Baldwin, J. Devore League Sur. Loc.

Republic Prod. Co. No. 1 J. C. Baldwin, J. Devore Sur. Drlg. sh. 5,237 ft.

Esperson—Liberty County

General Crude Oil Co. No. 24 Moores Bluff. Abd. 4,628 ft.

General Crude Oil Co. No. 26 Moores Bluff. Spudded.

Bay City—Matagorda County

Hamman Expl. Co. No. 1 J. H. Crocker, E. Hall Sur. 13⅜-in. csg. 1,260 ft.; 9⅝-in. csg. cmtd. at 6,500 ft.; T.D. 9,575 ft.; 7-in. csg. 9,575 ft.; perf. csg. 8,949½-56½ ft.; drill stem test 8,940-56½ ft.; showed S.W. no gas or oil; cement retainer set at 8,920 ft.; W.O.C.

Hawkinsville—Matagorda County

Sun Oil Co. No. 2 Craig, T. Williams Sur. Top salt 796 ft.; base salt 2,099 ft.; 18⅝-in. csg. 2,174 ft.; T.D. 3,724 ft.; 13⅜-in. csg. 3,700 ft.; W.O.C.

Markham—Matagorda County

Texas Gulf Prod. Co. No. 1 McDonald, I. &G.N. Sur. No. 7. T.D. 4,419 ft.; P.B. and sidetracked. Drlg. sh. 3,376 ft.

Thompson Drlg. Co. No. 1 R. J. Sisk, Blk. No. 2. T.D. 426 ft.; W.O.C.

Turman Oil Co. et al No. 1 Hudson, H. Parker Sur. R.U.

Van Vleck—Matagorda County

Skelly Oil Co. No. 2 W. P. Johnson, M. Cummins Sur. Loc.

Skelly Oil Co. No. 2 Rugely, I.&G.N. Sur No. 8. 10¾-in. csg. 1,399 ft.; drlg. sh. 4,835 ft.

Skelly Oil Co. No. 1 First Natl. Bank, I.&G.N. Sur. No. 7. Drlg. sh. 5,338 ft.

Conroe—Montgomery County

Gar-Flo Oil Co. No. 3 Keystone, A. Steel Sur. T.D. 5,060 ft.; 7-in. csg. 5,045 ft.

Houston Oil Co. No. 13 R. L. Cartwright, J. Davis Sur. Drlg. sh. 3,937 ft.

Normandie Oil Corp. No. 1 Koonce, D. W. Collins Sur. Drlg. sh. 4,030 ft. (cor.)

Strake Pet. Corp. No. 11-B Dean, W. C. C. Lynch Sur. 10¾-in. csg. cmtd. at 887 ft.; T.D. 5,116 ft.; I.P. 530 B.P.D. through ¼-in. ck.

Ace—Polk County

Peyton Bros. No. 2-B Kirby & West, G. & Thomas Sur. Rec. 500 ft. of S.W.; 50 lbs. of pressure on drill stem test 4,805-20 ft.; coring ahead.

Segno—Polk County

J. K. Dorrance No. 2 Wing Estate, I.&G.N. Sur. No. 15. R.U.

Humble O. & R. Co. No. 1 Kirby Lbr. Co., P. Garcia Sur. Loc.

S. J. Ryan No. 1 Wing Est., I.&G.N. Sur No. 15. Rig moved from location. Abd.

Quintana-O'Connor-Greta—Refugio County

Hewitt & Daugherty No. 40 Lambert, Swisher No. 7 Sur. Drlg. 4,230 ft.

Hewitt & Daugherty No. 41 Lambert, Swisher No. 7 Sur. Loc.

Illinois Pet. Co. No. 2 Heard, Ximines Sur. Drlg. 900 ft.

Illinois Pet. Co. No. 1 Wilson Heard, Ximines Sur. Drlg. 5,670 ft.

Josey & Bruton No. 4-A Lambert, Swisher Sur. Loc.

Floboots Oil Corp. No. 3-C O'Brien, Winifield Sur. Run. surf. csg.

Quintana Pet. Co. No. 3 Heard, Ximines Sur. T.D. 5,832 ft.

Quintana Pet. Co. No. 44-A Tomoconnor, Swisher Sur. T.D. 5,923 ft.; W.O.C.

Quintana Pet. Co. No. 11-E Tomoconnor, Maine Sur., Blk. 39. Drlg. 5,800 ft.

Quintana Pet. Co. No. 3 Riley, M. J. Ximines Sur. Loc.

United Gas Corp. No. 37 Lambert, Swisher Sur. No. 6. Drlg. 2,600 ft.

United Gas Corp. No. 38 Lambert, Swisher Sur. S.D. 5,660 ft.

United Gas Corp. No. 30 Lambert, Blk. 43, Swisher Sur. Run. surf. csg.

United Gas Co. No. 12 J. J. O'Brien. Drlg. 5,650 ft.

Keeran—Victoria County

Union of California No. 3 J. M. Keeran Estate, M. DeLeon Sur. Loc.

Placedo—Victoria County

Barnsdall Oil Co.-American Liberty Oil Co. No. 8 J. M. Pickering, A. Murray Sur. 7-in. csg. 4,758 ft.

Barnsdall-American Liberty Oil Co. No. 9 J. M. Pickering et al., J. W. Black Sur. Drk.

Barnsdall Oil Co.-American Liberty Oil Co., Lot 4, S.A.&M.G. Sur. Coring 4,338 ft.

Crown Central Oil Co. No. 4 O. M. Lauder, S.A.&M.G. Sur. No. 6. T.D. 897 ft.; running csg.

Magnolia Pet. Co. No. 5 Charles Sklar, S. A.&M.G. Sur. Loc.

Magnolia Pet. Co. No. 4 Sklar, S.A.&M.G. Sur. No. 7. T.D. 4,774 ft.; I.P. 350 B.P.D. through ¼-in. ck.

Shell Pet. Corp. No. 1 Houston Natl. Bank, S.A.&M.G. Sur. No. 7. Drlg. 2,200 ft.

Sun Oil Co. No. 5 Marek, Lot 89, S.A.&M.G. Sur. No. 8. Drlg. 1,910 ft.

Superior-Gillespie No. 2 Joe Hosek, S.A.& M.G. Sur. No. 70. M.I.M.

Westgate Oil Co. No. 6 F. F. Mieska, S.A. &M.G. Sur. No. 10. Drk.

Clay Creek—Washington County

Sun Oil Co. No. 1 H. Lauter, N. Clay Sur., 7-in. csg. 7,445 ft.; T.D. 8,306 ft.; making electrical survey.

Sun Oil Co. No. 7 Schlottman, J. F. Perry Sur. Cg. 2,080 ft.

Virginia Oil Co. No. 1 Joe Kenieczny, S. M. Williams Sur. Moving in drk.

Five Corners—Wharton County

Texas Co. No. 6-B Pierce, J. Hyland Sur. Drlg. sh. and L. 2,465 ft.

Louise—Wharton County

Pure Oil Co. No. 7 Kountze, Morris & Cummins Sur., sec. 19, T.D. 5,170 ft. 5½-in. csg. 5,170 ft.; tested S.W. with little gas; abd.

Spanish Camp—Wharton County

Felmont Oil Corp. et al No. 1 Lyle Logue, D. Wade Sur. T.D. 6,510 ft.; blew out; stuck D.S.; fsg.

Withers—Wharton County

Texas Co. No. 19-C Pierce, Wm. Pettus Sur. T.D. 5,571 ft.; 7-in. csg. 5,563 ft. flwd. oil and S.W.; P.B. 5,544 ft.; flwd. 9 B.P.D. through 6/64-in. ck.

Texas Co. No. 20-C Pierce, Caldwell Sur. T.D. 5,554 ft.; I.P. 119 B.P.D. on ⅛-in. choke.

Texas Co. No. 21-C Pierce, Wm. Pettus Sur. 10¾-in. csg. 1,218 ft.; W.O.C.

Texas Co. No. 22-C Pierce, Wm. Pettus Sur. Drlg. sh. and L. 4,255 ft.

Texas Co. No. 23-C Pierce, Wm. Pettus Sur. Loc.

GULF COAST WILDCATS

Austin County

R. L. Hopkins No. 1 J. W. Recnecke, J. Stephenson Sur. R.U.

Brazoria County

Beatty, Bowles and Borsodi No. 1 Trusk, Lot 4, Blk. 8, H.T.&B. Sur. 9⅝-in. 6,430 ft.; T.D. 10,082 ft.; P.B. 5,600 ft. prepare to perforate csg. 5,575-82 ft.

Ohio Oil Co. No. 1 Hazel Roirt, D. McNeil Sur. No. 2. Drlg. sh. 4,903 ft.

Pure Oil Co. No. 1 P. M. Slade, S. F. Austin Lge. R.U.

Texas Co. No. 2 Robbins, James W. Brougham Sur. R.U.

Calhoun County

Matagorda Oil Co. No. 1 Brundet, Tr. 8, Matagorda Island. 13⅜-in. csg. at 1,837 ft.

Colorado County

Coyle-Concord & Sterling No. 1 Mary E. South, I.&G.N. Sur., sec. 41. T.D. 6,181 ft; 5½-in. csg. 6,187 ft.; P.B. 6,056 ft.; set whipstock at 5,330 ft.; T.D. 6,120 ft.; abd.

Eden Oil Co. No. 1 Trulia Wells, M. Whitting and Osborne League. 10¾-in. csg. 650 ft.; drlg. sh. and sd. 3,857 ft.

Fayette County

McNeil Pet. Co. No. 1 Dybla, A. Thompson Sur. 10¾-in. csg. 21 ft.; W.O.C.

Galveston County

Shell Pet. Corp. No. 1 Maco Stewart, Spillman Sur. 9⅝-in. csg. 7,707 ft.; T.D. 10,460 ft.; P.B. 5,147 ft.; perf. csg. 5,120-35 ft.; blew out making gas, oil and S.W.; abd.

Shell Pet. Corp. No. 2 Maco Stewart, 4,400 ft. E of No. 1 J. Spillman Sur. 10¾-in. csg. 1,484 ft.; drlg. sd. and bldrs. 3,919 ft.

Hardin County

T. S. Deskin No. 1 Mary B. Collier, O. C. Nelson Sur. Loc.

E. J. Kimball No. 1 Keitle Lbr. Co. Loc.

Harris County

Farrel and Cox No. 1 Bender, N. W. Travis Sur. S.D. 700 ft.

R. W. Ford et al No. 1 W. A. and O. C. Pruitt, G. Brooks Sur. Loc.

George Lawrence et al No. 1 Zoppa, J. Farwell Sur. 10¾-in. csg. 605 ft.; T.D. 6,525 ft.; P.B. to test sd. 6,206-26 ft.; stuck drill pipe at 1,500 ft.; S.D.

H. M. Harrell et al No. 1 F. N. Bullock, Charles Bowman Sur. R.U.

Stanolind O. & G. Co. No. 1 Warren Minerals, H.T.&B. Sur. No. 1. 7⅝-in. csg. 5,749 ft.; T.D. 5,825 ft.

Texas Gulf Prod. Co. No. 1 Gillespie and Garnsey, Simon Contreras Sur. 10¾-in. csg. 1,438 ft.; drlg. 2,312 ft.

Houston County

American Liberty Oil Co. No. 1 J. D. Bean, D.W.R.R. Co. Sur. 10¾-in. csg. 1,796 ft. Drlg. L. 3,474 ft.

Arthur Cameron No. 1 A. B. Spence, D. Aldrich Sur. Drlg. sd. and sh. 3,510 ft.

Jefferson County

Humble O. & R. Co. No. 1 Jefferson Ld. Co., C. Hillibrant Sur. T.D. 8,232 ft.; 7-in. csg. 8,162 ft.

Lavaca County

Welshire Union Oil Co. No. 1-A Pohl-Bass Sur. T.D. 3,250 ft.; P.B. 2,950 ft.; two tests failed; S.D.

Liberty County

Kenco Oil Corp. No. 1 E. B. Pickett, H. T.&B. Sur. No. 10. T.D. 1,251 ft.; 10¾-in. csg. 1,237 ft.; S.D. 2,829 ft.

Matagorda County

Continental Oil Co. No. 2 Robbins, J. C. Franz Sur. T.D. 6,612 ft.; 11¾-in. csg. 6,430 ft.; W.O.C.

Glenn McCarthy No. 1 Foley, sec. 19, Susan Perkins Sur. 10¾-in. csg. 2,008 ft. T.D. 7,802 ft.; washing to bottom.

Strake Pet. Co. No. 1 G. T. Sargent, L. W. Parker Sur. 13⅜-in. csg. 1,607 ft.; 9⅝-in. csg. 6,750 ft.; drlg. sh. 8,827 ft.

United North and South Development Co., J. S. Cotton Sur. Drlg. sh. 7,030 ft.

Polk County

Mayo et al No. 1 Catline Mayo, J. G. Loving Sur. R.U.

Wynne Drlg. Co. No. 1 C. D. Roadche-J. Patrick & J. Downey Sur. Drlg. 2,730 ft.

Refugio County

Paul Meadows No. 1 Temple Lbr. Co., G. W. Main Sur. Drlg. sh. 6,218 ft.

Trinity County

Daniel E. Boone No. 1 Tullis, Wm. Watson Sur. Abd. 2,504 ft.

Tyler County

Republic Prod. Co.-Houston Oil Co. No. 2 Hurd, N. Hurd Sur. Bldg. road.

Victoria County

Magnolia Pet. Co. No. 1 Annie B. Wayne, T.&N.O. Sur. No. A-407. R.U.

Plymouth Oil Co. No. 1-A J. J. Welder, S. A. Beldina Sur. T.D. 403 ft.; S.D. 675 ft.

Walker County

Garland, Hartman & Page No. 1 Carey Ld. & Dev. Co., D. M. McDonald Sur. R.U.

Roswell Oil Co. No. 1 J. Bosborn, J. Jordan Sur. S.D. 520 ft.

Waller County

Sumas Prod. Co. of Austin No. 1 J. J. Menker. 10¾-in. csg. 300 ft.; drlg. sh. 2,730 ft.

H. E. Williams No. 1 T. C. Giddings Est., David Mouser Sur. R.U.

Washington County

Smith & Schlinke No. 1 Woode, J. Clark Sur. S.D. 3,000 ft.

Wharton County

Sam Harrison No. 1 Byerly, E.T.R.R. Sur. No. 27. Drlg. sh. 3,312 ft.

Texas Co. No. 1 Kluck, Jos. Hyland Sur. Drlg. sd. and gravel 39 ft.

Texas Co. No. 1 E. A. Wheatherer, L. P. Ogden Sur. M.I.R.

S. W. TEXAS WILDCATS

Aransas County

Barnsdall Oil Co. No. 1-A Kate Edwards, 330 ft. S line, Lot 85, 660 ft. SW No. 1, Wm. Lewis Sur. Spudding.

Atascosa County

Frontier Oil Co. No. 1 Oppenheimer, John Sharp Sur. Set csg. 2,770 ft.; washing down.

F. Fuchs No. 1 Sanders, J. P. Garmon Sur. Drlg. 2,812 ft.

R. J. Roberts et al No. 1 Elder, Sur. 190. Drlg. 326 ft.

Bee County

J. R. Dougherty No. 1 Weiss, 1,300 ft. E line, 6,200 ft. N line, Uranga grant. Loc.

Illinois Pet. Co. No. 1 Hartzendorf, Geo. A. Kern Sur. T.D. 3,909 ft.; R.U. to pump.

La Salle Pet. Co. No. 1 Ray, Anna Burk Sur. T.D. 5,230 ft.; S.D.

W. C. McBride, Inc., No. 1 Brown & Hansen, J. Pace Sur. Drlg. 1,021 ft.

Blanco County

E. L. Nixon No. 1 Hornberger, 1,200 ft. S line, 300 ft. E line, Sur. 723. Drlg. 697 ft.

Brooks County

Texas Gulf Prod. Co. No. 1 Proctor, 330 ft. S and E lines, Blk. 2, sec. 20, Los Almos and Loma Blanca Surs. R.U.

Burleson County

M. R. Exploration Co. No. 3 Fountain, Wm. Raleigh Sur. M.I.M.

Red Bank Oil Co. No. 2 Grann, 3,063 ft. N line, 1,900 W line, E. Santef Sur. M.I. Rig.

Caldwell County

C. A. McDaniels No. 1 Trammel, H. Hunter Sur. Drlg.

Exploration Co. No. 1 E. Band, S. Seale Sur. Reworking 2,430 ft.

C. A. McDaniels No. 1 Tinkle, S. Seal Sur. T.D. 2,681 ft.; P.D. 2,490 ft.; swbg. oil.

George Young No. 1 Schmidt, 1,265 ft. E line, 150 ft. S line, Williams Sur. Set csg. 1,362 ft.; W.O.C.

Cameron County

Saxet Prod. Co. No. 1 Port Isabel Irr. Co., 600 ft. N line Loma Alta Lake, Sh. 29, Espiritu Santo Gr. Loc.

Stapper Petroleum Corp. No. 1 Port Isabel Irrigation Co., Blk. 17, P.I.I.Co. Subd., Santo Gr. Set surf. csg. 1,500 ft.; W.O.C.

Duval County

Argo Oil Co. and Clopton No. 2 Smith-Corkill, Sur. 61. Testing sd. 2,775-80 ft.

Atlantic Ref. Co. No. 1 Hamilton, sec. 37. Loc.

C. K. Gravis No. 1 Holzapfel, N½ Sur. 42. Loc.

Humble O. & R. Co. No. 1 C. D. Sevier, Sur. 329 ft. Drlg. hd. sd. 3,371 ft.

Magnolia Pet. Co. No. 1 D.C.R.C., 330 ft. S and W lines, Isc., sec. 902. Loc.

W. D. Masten No. 3 Ruiz, Sur. 128. D.&A. 2,611 ft.

Oliver Oil Co. No. 1 Shaffer, Sur. 146. T.D. 4,016 ft.; D.&A.

Edwards County

Auld, Dodson & Lyman No. 1 Rigsby, sec. 16. Loc.

I.T.I.O. No. 1 Love & Evans, sec. 66, Blk. 3, G.W.T.&P. Ry. Sur. (Workover). Prep. deepen from O.T.D. 3,002 ft. to 6,250 ft.

Plateau Oil Co. No. 1 R. L. Hatch, sec. 66, J. W. May Sur. S.O. 4,885 ft.; T.D. 5,160 ft.; S.D.

Fayette County

McNeil Pet. Co. No. 1 Dybola, A. Thompson Lge. R.U.

Goliad County

Rual Singer No. 1 C. Wood, Geo. Villa Sur. Drlg. sh. 3,927 ft.

Sun Oil Co. No. 2 Fromme, L. Fulton Sur. T.D. 4,950 ft.; D.&A.

Gonzales County

M. S. Holliday No. 1 Edwards, W. W. Page Lge. Drlg. 1,356 ft.

Guadalupe County

Felmont Oil Co. No. 1 Willman, J. Cantu Sur. T.D. 2,190 ft.; D.&A.

Lincoln Pet. Co. No. 1 Baenzinger, Mansola Sur. Set csg. 1,990 ft. Drlg. plugs.

Long & Ross No. 1 Feltz, Dunn Sur. T.D. 620 ft.; D.&A.

Hidalgo County

Dale Smith No. 1 Fairbanks & Young, Blk. 44, Porc. 46, jurisdiction of Reynosa. Drlg. 2,196 ft.

Sun Oil Co. No. 1-A Sweeny Est., Lot 1, Wayne Wood Subd. No. 2. T.D. 6,598 ft.; stdg.

Jim Hogg County

Gifford Oil Co. No. 1 Armstrong, Sur. 43. 5-min. D.S.T. 3,056-63 ft.; made 400 lbs. dry gas; sd. 3,056-61 ft.; T.D. 3,900 ft.. S.D.; W.O.O.

S. Payne No. 1 Holbien, 150 ft. N and W lines, Blk. 10, Sh. 3, Animas Gr. R.U.

Jim Wells County

Arkansas Fuel Oil Co. No. 1 G. H. Bierstadt, Blk. 32, Reynolds Sur. Loc.

R. G. Swiger No. 1 R. Adams, Sur. 122. Cg. 2,712 ft.

Karnes County

De Graff & Reele No. 1 Cochran, 460 ft. E line, 160 ft. S line, McConnell Lge. Drlg. 573 ft.

L. Glasscock No. 1 Conway, 146-ac. tr., J. Johnson Sur. Set csg. 3,308 ft.; drlg. 3,317 ft.

Victoria Drlg. Co. No. 1 John Yanta, J. Hardaway Sur. Drlg. 1,367 ft.

Victoria Drlg. Co. No. 1 Wm. Yanta, J. Hardaway Sur. M.I.M.

Kerr County

S. W. Forrester No. 1 Baily, Brendle Sur. No. 408. Washing down 740 ft.

Live Oak County

H. Coquat No. 1 L. Reagan, Santiago McGloin Sur. Drlg. 2,037 ft.

R. H. Feltner No. 2 Sanger, 330 ft. W line, 990 ft. N line, Sur. 385. Loc.

Loma Oil Co. No. 2 Cardwell, 95-ac. tr., Sparks Sur. Loc.

Marzo Oil Co. No. 1 Chestnut, L. Ayres Sur. M.I.M.

Reynolds & Richardson et al No. 1 Geo. West, 330 ft. N and W lines, sec. 515, J. Poitevent Sur. M.I.M.

R. B. Sanger No. 1 Adams, 330 ft. N and E lines, 80-ac. tr., Sur. 122, R.U.

McMullen County

Big Rock Oil Corp. No. 1 Martin, Uleiting Sur. No. 6. S.D. 532 ft.

R. H. Feltner No. 1 Rhodes, NE ¼, Sec. 18. R.U.

E. M. Jones No. 1 Ezell, 160-ac. tr., Sec. 3, Ezell Subd., Adams Sur. Blew out in gas sd. killed and capped.; R.U. to rework.

Rowan & Hope No. 1 Rhodes, NE¼ sec. 18, Seale & Morris Sur. M.I.M.

Medina County

F. Brown No. 1 Bilhartz, J. Campbell Sur. 24. S.D. 200 ft.

A. Chmel No. 1 Odem, 160 ft. W line, 493 ft. N line tr., Castro Sur. 174. M.I.M.

Nueces County

Allen & Seaboard Oil Corp. No. 2 Chapman, 660 ft. S and W lines, sec. 38, 10-min. D.S.T. 5,050-66 ft.; rec. 400 lbs. wet gas and 60 ft. mud and gaso.; T.D. 5,872 ft.; reaming.

Cowan & Storey No. 1 Smith, Blk. 22, sec. 38, Flour Bluff and Encinal Garden Trs. Drk.

E. M. Jones No. 1 Cook, 2,500 ft. N line, 330 ft. E line, 546-ac. tr., Guadrilla Irr. Co. Sur. 139. Set 13⅜-in. csg. 572 ft. S.D. water.

Mills Bennett Prod. Co. No. 1 Lamb, 330 ft. E Mathis Highway, 330 ft. N line, 80-ac. tr., 527.4-ac. tr., V. Lopez de Herrera Sur. Drlg. 1,957 ft.

Sloan & Green No. 1 Cassens, sec. 26, Longorio Sur. R.U.

Southern Minerals Corp. No. 1 R. King, sec. 32, King Farm Lots. Drk.

Steve Paul No. 1 Smith, 1,650 ft. E line, 330 ft. S line, sec. 38, Flour Bluff Encinal Trs. Loc.

Baltic Drlg. Co. No. 1 Poenisch, Lot 2, Blk. 32, Flour Bluff Addn. (workover of former Hurlburt test). O.T.D. 6,250 ft.; R.U.; S.D.

Real County

Sun Oil Co. No. 1 Dietert, 1,980 ft. E line, 660 ft. S line, sec. 7, G.W.T.&B. Sur. Drlg. 4,767 ft.

San Patricio County

Buckingham Oil Co. No. 1 G. Davis, Sec. 27. Loc.

W. B. Craig No. 1 Drainage Ditch, M. Remon Sur. Hd. sd. cap. 4,907-10 ft.; sd. 4,910-11 ft. S.O.; S.D. repairs.

L. A. Douglas and J. O. Williams No. 1 Kokernot, 90-ac. tr., sec. 19. T.D. 6,521 ft.; D.&A.

Eleanor Oil Co. No. 1 Davis, 208.8-ac. tr., G. Grover Sur. M.I.M.

Eleanor Oil Co. No. 1 Green Est., 1,674-ac. tr, T. T. Williamson Sur. Spudded; set surf. csg.; W.O.C.

Phillips Pet. Co. No. 1 Schmidt, sec. 81, Paul Subd. Spudded.

Windsor Oil Co. No. 1 Bissett, Tr. 3 Tivoli Subd., Crockett Sur. Loc.

Starr County

J. F. Anderson No. 1 Yzagierre, Tr. 1, Porc. 79, J. of Camargo. T.D. 3,530 ft.; D.&A.

J. H. Clopton No. 4 Tijerina, Lot 12, Sh. 14-C, Porc. 80. Drlg. 176 ft.

Dodd Trustee No. 1 Garcia, Porc. 84. T.D. 1,507 ft.; D.&A.

Dodd Trustee No. 1 Wood Estate, Porc. 84. Drlg. sh. 1,511 ft.

Webb County

O. W. Killam No. 1 fee, Sur. 1,690. Drlg. 3,432 ft.

Lu-Tex Oil Co. No. 1-A Lone Star Constr. Co., Blk. 26, Porc. 12, 13 and 14. Drlg. 1,521 ft.

Mills Bennett Prod. Co. No. 1 J. K. Kirkpatrick, Sur. 14. Loc.

Mills Bennett Prod. Co. No. 1 Martinez, Blk. 84, Sh. 1, E. P. Grullo Gr. Loc.

Wilcox O. & G. Co. No. 1 Dunbar, Sur. 2,292, J. Galen Gr. Drlg. 3,842 ft.

Willacy County

Ruez-Morton, Inc., No. 1 F. Armendiaz C Lot 9, Sh. 4, San Juan de Carricitos Gr. M.I. rig.

Ruez-Morton, Inc., No. 1 Johnson-Stillman, Lot 14, Blk. 25, Sh. 44, San Juan de Carricitos Gr. R.U.

Shell Pet. Corp. No. 1 Yturria, Sh. 64, San Juan de Carricitos Grant (workover). T.D. 7,662 ft.; to drill deeper; R.U.

Wilson County

A. G. Reimenschneider No. 1 Eckel, 3,210 ft. WL., 474 ft. SWL. tr. D.&A. 1,043 ft.

Zapata County

Ivan Howard and R. F. Duggan No. 1 Cuellar Bros., Sur. 248. R.U.

Jennings No. 1 Martinez, Sur. 434. T.D. 150 ft.; S.D.

J. D. Long No. 1 Phelps, 200-ac. tr., Villa Gr. Oil sd. 1,593-97 ft.; set 5½-in. csg.; sat. sd. 1,600-04 ft.; tstd. S.W.; T.D. 1,608 ft.; D.&A.

R. Wheeler No. 1 Welch, Blk. 1, E. K. Bateman Subd. Loc.

Zavalla County

Wilcox O. & G. Co. No. 1 Gilliman, sec. 11. Drlg. 1,426 ft.

S. W. TEXAS PROVEN

McCampbell—Aransas-San Patricio Counties

Atlantic Ref. Co. No. 2-B McCampbell, Lot 8, Blk. 39. Set csg. 6,549½ ft.; comp.; 121.32 B.P.D. on 9/64-in. ck.; blew out after comp.; killed and reworked; recomp. 100 B.P.D. on ⅛-in. ck.

Atlantic Ref. Co. No. 3-B McCampbell, Lot 5, Blk. 40. Set 10¾-in. csg. 1,453 ft.; W.O.C.

Atlantic Ref. Co. No. 3-C McCampbell, Lot 40. Drlg. 5,121 ft.

Buckingham Oil Co. No. 3-A McCampbell, 660 ft. S. of No. 1-A, Blk. 42. Drlg. 6,516 ft.

Buckingham Oil Co. and Jones No. 1-B McCampbell, Lots 13 and 14, sec. 40. S.D. 5,406 ft.

Collins & Broughton No. 1 McCampbell, Lot 5, Blk. 37, McCampbell Subd. Drlg. 1,563 ft.

J. Nelson No. 1 Riggs, 330 ft. NW line, 213 ft. SW line, 6.46-ac. tr., Tra. 12 and 13, Blk. 16. Loc.

Hilbig—Bastrop County

Joe E. Mills No. 1 Askew, 600 ft. NW line, 1,525 ft. SW line, 278.5-ac. tr., Wolfenberger Sur. T.D. 2,907 ft.; S.D.

Cosden—Bee County

Elwood & Young No. 3 Barnett, John Place Sur. Sd. 3,636-53 ft.; S.O.; P.B. 3,000 ft.; T.D. 4,050 ft.; S.D.; W.O.O.

Plummer—Bee County

W. C. McBride No. 1 Plummer, 34-ac. tr., sec. 33, Plummer-Chessman Sur. Loc.

Von Ormy—Bexar County

L. K. Oil Co. No. 1 Baker, F. Rolen Sur. Comp. 3 B.P.D.; T.D. 840 ft.

Alta Mesa—Brooks County

Standard of Texas No. 2 Mestina, La Mestina de Gonzalina Gr. Drlg. 1,821 ft.

Standard of Texas No. 3 Mestina, La Mestina de Gonzalina Gr. Drlg. 1,643 ft.

Alta Verde—Brooks County

L. & W. Oil Co. No. 1 Wm. Singer, Blk. 4, Sur. 436. Sd. 515-20 ft.; T.D. 1,003 ft.; set 4½-in. csg. 934 ft.; testing; T.D. 948 ft.

Branyon—Caldwell County

Adams & Lyles No. 3 Ellison, D. Cooper Sur. Cg. 2,047 ft.

R. B. Byrd No. 1 McGee, J. A. Neal Sur. Drlg. 212 ft.

Colby O. Co. No. 2 McCrory, 20-ac. tr., J. Neil Sur. Loc.

Lincoln Pet. Co. No. 3-B Branyon, J. L. Miller Sur. T.D. 2,245 ft.; comp. 20 B.P.H.

Lincoln Pet. Co. No. 4 Branyon, Cooper Sur. Loc.

Mee, Ames & Mee No. 2 Lancaster, D. Cooper Sur. Comp. 3 H.P.H.; T.D. 2,200 ft.

Strickland No. 1 Calliham, J. R. Miller Sur. Drlg. 1,821 ft.

Taylor Pet. Co. No. 1 Caldwell County, 4 ac. tr., D. Cooper Sur. Drlg. 566 ft.

Whisenant & Trenchard No. 2 Magee, J. A. Neal Sur. Spdg.

Whisenant & Trenchard No. 1 Young, J. R. Miller Sur. T.D. 2,225 ft.; R.U. to pmp.

Slick—DeWitt County

Southwestern Dev. Synd. No. 1 Potter, O. Marshall Sur. D.S.T. 4,215-35 ft.; show gas and 190 ft. mud in 10 min.; D.S.T.

4,221-40 ft.; 45 ft. oily mud with gas; W.P. 290 lbs.; set 5½-in. csg.; W.O.C.

Charamousca—Duval County

N. V. Duncan No. 3 Worden-Drought, Sur. 151. Cg. 1,523 ft.
Magnolia Pet. Co. No. 1 D.C.R.C., Sur. 152, Drk.

Colmena—Duval County

Conservative Oil Co. No. 2 D.C.R.C.-Santa 133 ft. N Eline, 1,200 ft. SE line, Blk. 13 sec. 51. S.D. 1,544 ft.
Wellington Oil Co. No. 1 D.C.R.C., 330 ft N and W lines, Blk. 11, sec. 51. T.D. 1,529 ft.; completing.
Wellington Oil Co. No. 2 D.C.R.C., Blk. 10, sec. 51. Cg. 1,552 ft.

Driscoll—Duval County

Continental Oil Co. No. 13-A Sevier, Sur. 448. Spudded.

El Mesquite—Duval County

Rogers & Rogers No. 3 Pena, El Mesquite Gr. R.U.

Government Wells—Duval County

Magnolia Pet. Co. No. 10 Lundell, Sur. 60. Comp. 30 B.P.D.; T.D. 2,277 ft.
Magnolia Pet. Co. No. 11 Lundell, Sur. 60. M.I.M.
San Diego Oil Corp. No. 1 Millard, Sur. 64. Cg. 250 ft.
Reed & McKay No. 13 Lundell, Sur. 60. Sd. 2,258-75 ft.; comp. 165 B.P.D.; T.D. 2,280 ft.
Reed & McKay No. 14 Lundell, Sur. 60. Sd. 2,265-76 ft.; testing.
Southwest Drlg. Co. No. 2 Hahl, Sur. 64. Sd. 2,544-49 ft.; testing.

Hoffman—Duval County

Bridwell Oil Co. No. 5 Robles, sec. 68 Tstg. sd. 2,696-99 ft.; completing 2,-705 ft.
Bridwell Oil Co. No. 6-B Sutherland, 990 ft. S and E lines, Sur. 122. Testing 2,820 ft.
Duval Oil Corp. No. 8 Hoffman, Sur. 118 Sd. 2,851-56 ft.; comp. est. 100 B.P.D.
Duval Oil Corp. No. 9 Hoffman, Sur. 118. Cg. 2,847 ft.
Plymouth Oil Co. No. 4 Hoffman, sec. 117. T.D. 2,826 ft.; P.B. Govt. Wells sd.
Standard of Kansas No. 3 Green, Sur. 118. Drlg. 297 ft.

Kohler—Duval County

Bun Bros. & Coates No. 1-D Peters, sec. 397. T.D. 2,638 ft.; D.&A.
Chiquita Oil Co. No. 1 Peters, 162-ac. tr., Sur. 162. M.I.M.
Humble O. & R. Co. No. 3 Peters, sec. 398. Flwg. 10 bbls. fluid for 17 hrs., 36% wtr.; T.D. 2,658 ft.; P.B. 2,655 ft.; milling 2,655 ft.
Sun Oil Co. No. 1 Peters, 330 ft. S and W lines, Sur. 161. Set csg. 2,446 ft.; comp.; gasser; spraying oil.
Windsor Oil Co. No. 5-B Peters, Sur. 34. Loc.

Labbe—Duval County

Magnolia Pet. Co. No. 2 Labbe ranch, 990 ft. S and W lines, sec. 1. Sd. 2,904-10 ft.; D.S.T. 290 ft. P.L.O. in 10 min.; set 7-in. csg. 2,910 ft.; deepened to 2,915 ft.; T.D. 3,249 ft.; P.B. 2,908 ft.; swbg.

Loma Novia—Duval County

Duval Oil Corp. No. 29 Bishop, sec. 57. Comp. 330 B.P.D.; T.D. 2,376 ft.
Duval Oil Corp. No. 30 Bishop, sec. 57. Drlg. 2,421 ft.
Eastern Texas Prod. Co. No. 5 Hubbard Sur. 71. R.U.
Hamil & Smith No. 2 Ruiz, Sur. 41. Comp. 200 B.P.D.; sd. 2,598-2,612 ft.
Hamil & Smith No. 3 Ruiz, Sur. 41. Drlg. 1,265 ft.
Humble O. & R. Co. No. 22 Ruiz, sec. 553. T.D. 2,753 ft.; W.O.P.E.
Humble O. & R. Co. No. 23 Ruiz, Sur. 553. Drlg. 1,037 ft.
Magnolia Pet. Co. No. 56 Hahl, Sur. 67. T.D. 2,755 ft.; comp. 144 B.P.D.
Magnolia Pet. Co. No. 57 Hahl, Sur. 67. Sd. 2,736-43 ft.; set csg.; W.O.C.
Magnolia Pet. Co. No. 9 Herbst, Sur. 70 Sd. 2,728-40 ft.; comp. 35 B.P.D.
Rosan Oil Co. No. 4-A Hubbard, Sur. 71 M.I.M.
Russ Pet. Co. No. 8-D Ruiz, SW¼ SE¼, sec. 64. Drlg. 2,227 ft.
Steiren & DeLange No. 12 Wright, sec. 72. T.D. 2,953 ft.; comp. 144 B.P.D.
Texas Co. No. 1 L. C. Morris, sec. 133. T.D. 2,941 ft.; D.&A.
Texas Co. No. 20 Bishop, 160-ac. tr., sec. 57. Drlg. 827 ft.

Lopez—Webb—Duval Counties

Gem Oil Co. No. 2 Peal, Sur. 72. M.I.M.
Humble O. & R. Co. No. 7-C D.C.R.C., Sur. 901. T.D. 2,145 ft.; comp. 45 B.P.H.
Humble O. & R. Co. No. 9-C D.C.R.C., Sur. 901. Sd. 2,131-40 ft.; set csg.; W.O.C.
Magnolia Pet. Co. No. 32 Peal, Sur. 383. Set csg. 1,341 ft.; comp. gasser spraying oil; sd. 2,093-2,102 ft.
Mills Bennett Prod. Co. No. 17 Billings, Sur. 113. R.U.
Mortimer & Springer No. 17-B Peal, NW¼, Sur. 796. T.D. 2,143 ft.; comp. 18 B.P.H.
Mortimer & Springer No. 18-B Peal, Sur. 796. Drlg. 1,126 ft.
Mortimer & Springer No. 19-B Peal, NW¼, Sur. 796. Sd. 2,128-42 ft.; comp. 443 B.P.D.
Mortimer & Springer No. 20-B Peal, NW¼, Sur. 796. T.D. 2,156 ft.; comp. 180 B.P.D.
Mortimer & Springer No. 21-B Peal, Sur. 796. Drlg. 927 ft.
Sierra O. & Roy. Co. No. 6 Billings, SW¼, Sur. 113. T.D. 2,210 ft.; comp. 120 B.P.D.

Peters—Duval County

Rio Bravo Oil Co. & Coates No. 2-C Peters, Sur. 398. No report.
Windsor Oil Co. No. 1 Peters, Sur. 34 (workover). Testing sd. 2,628-44 ft.
Windsor Oil Co. No. 5-B Peters, Sur. 34. T.D. 2,605 ft.; D.&A.

Piedra Lumbre—Duval County

Magnolia Pet. Co. No. 10 D.C.R.C., Sur. 100. T.D. 1,970 ft.; comp. 75 B.P.D.
Magnolia Pet. Co. No. 11 D.C.R.C., Sur. 100. M.I.M.

Sarnosa—Duval County

Humble O. & R. Co. No. 2 Arnstine, Sur. 130. T.D. 2,470 ft.; D.&A.
Humble O. & R. Co. No. 3 Arnshire, Sur. 130. R.U.

Seven Sisters—Duval County

W. W. Blocker No. 3 Benton-Coopwood, Sur. 382. Spdd.
Humble O. & R. Co. No. 26 Badgley, Sur. 307. T.D. 2,492 ft.; swbg. in.
Humble O. & R. Co. No. 5 Dowdy, sec. 272. Drlg. 283 ft.
Humble O. & R. Co. No. 47 Smith, Sur. 352. Drlg. sd. 2,478 ft.
Humble O. & R. Co. No. 48 Smith, Sur. 382. T.D. 2,476 ft.; comp. 27 B.P.D.
Rellence Oil & Roy. Co. No. 1-A Lichtenberger, sec. 225. R.U.
Westheimer & Daube No. 30 Campos, Sur. 224. R.U.

Sweeden—Duval County

Hiawatha O. & G. Co. No. 1 Herberger, 330 ft. S and W lines, sec. 10, Agua Poquita Gr. Drlg. 2,567 ft.
Hiawatha O. & G. Co. No. 1 Miller, 330 ft. N and E lines, sec. 24, Agua Poquita Gr. Drlg. 2,023 ft.

Pearsall—Frio County

Amerada Pet. Corp. No. 7 Oppenheimer, 1,-320 ft. W line, 330 ft. S line, Gibson Sur. 16. (W.O.); stdg. 5,573 ft.; R.U.

North Pettus—Goliad-Karnes Counties

Diamond Halff Oil Co. No. 1-C Gillette, 745-ac. tr., J. Gomez Sur. Sd. 3,668-3,-876 ft.; completing.

Clark—Guadalupe County

Diamond Halff Oil Co. No. 2 Larison, G. DeWitt Sur. Spudded.
Marts & Bevins No. 1 Grim, D. DeWitt Sur. 13. Comp. 163 B.P.D.; T.D. 2,542 ft.
D. Mulholland No. 1 Johns, J. K. Davis Sur. M.I.M.

Darst Creek—Guadalupe County

Freeman Oil Co. No. 3 Larrison, G. DeWitt Sur. 13. Loc.
La Jita Corp. No. 2 Denmann, 50-ac. tr. Set csg. 2,332 ft.; T.D. 2,332 ft.; T. Chalk 2,279 ft.; comp. 145 B.P.D.
Saxet Prod. Co. No. 1 Inman, G. DeWitt Sur. Spudded.
V. G. Schimmel No. 2 Grimm, Dewitt Sur. T.D. 2,525 ft.; W.O. pump.

Nolte—Guadalupe County

Riddle Oil Co. No. 1 Hertf, Gortari Sur. No. 76. Set csg. 20 ft.; W.O.C.
Riddle Oil Co. No. 2 Nolte, Lowell Sur. 16. R.U.
Wheelock & Collins No. 1 Warnecke, 335-ac. tr. R.U.

Sal Mar—Guadalupe County

Perot Oil Corp. No. 1 Priestly, Williams Sur. 46. Drlg. 1,226 ft.

LaBlanca—Hidalgo County

Gulf States Oil Co. No. 3 Engleman, Lot 3, Blk. 70, Las Mestanas Gr. (workover). O.T.D. 6,812 ft.; P.B. 6,692 ft.; R.U. to D.D.
Sterling O. & R. Co. No. 1 Engleman, 660 ft. N and E lines, Lot 8, Blk. 95. Set surf. csg. 1,250 ft.; drlg. hd. sh. and L. 5,365 ft.

Mercedes—Hidalgo County

Union Sulphur Co. No. 7 American Rio Grande, Tr. 2,309, Blk. 59, (workover), perf. csg. 7,481-91 ft.; P.B. 7,592 to 7,-513 ft.

Samfordyce—Hidalgo-Starr Counties

Ralph Fair No. 1 Flores, 30-ac. tr., Sh. 250, Porc. 38. Spudded.
E. A. Graham No. 1 Yturria Ld. & Livestock Co., Tr. 9, Porc. 100. Cg. 2 872 ft.
Harrison & Danvers No. 5-A Guerra, 30.78-ac. tr., Tr. 251, Porc. 38. Cg. 2,937 ft.
Henshaw Bros. No. 1 Elizando, Porc. 39. Drlg. 1,110 ft.
Val-Tex Oil Co. No. 2 Chapa, Tr. 250, Porc. 39. Spudded.
Young & Bonnear No. 1 Diaz, Tr. 331, Porc. 40. R.U.

Alworth—Jim Hogg County

French Oil Co. No. 4 Garza, Blk. 1, Sur. 269. Fsg. 2,620 ft.

Colorado—Jim Hogg County

J. H. Meek, No. 3-A Martinez, 1,650 ft. E line, 1,550 ft. N line, Sur. 623. T.D. 3,-202 ft.; top sd. 2,997 ft.; D.&A.

Randado—Jim Hogg County

J. W. Adams No. 1 Allen, B.G.&F. Sur. 48, R.U.
Randado O. Corp. No. 36 Palacious, Blk. 18, Sur. 291. Tstg. sd. 1,283-87 ft.

Bentonville—Jim Wells County

Danciger Oil Co. No. 1 Bird, de la Garcia grant. M.I.M.
Tom Graham No. 2 Luby, Share 4, Los Presnos de Abajo Gr. Drlg. 5,472 ft.
Stanolind O. & G. Co. No. 1 Bird, de la Garcia Gr. Drlg. 5,321 ft.
Stanolind O. & G. Co. No. 2 Pope, sec. 13, King Farm Lots. Drlg. 1,511 ft.

Premont—Jim Wells County

Tom Graham No. 2-A Bennett, 660 ft. E of No. 1-A. Sd. 2,256-61 ft.; flowing 5 B.P.H.
Tom Graham No. 2 Johnson, Lot 76, Sur. 215. Sd. 2,349-54 ft.; set csg. 2,354 ft.
Tom Graham No. 1 Wm. Singer, C Lots 71 and 74, Sur. 76. T.D. 3,400 ft. P.B. 3,163-67 ft.; perf. 3,157-64 ft.
W. F. Morgan No. 2 Laughlin, Tr. 7 and 10, sec. 76, Sur. 231. R.U.
Richardson, Ware & Richardson No. 1 Miller, cen. Lots 40 and 41, Holdeman Subd., sec. 71. Drk.
Securities Royalty Co. No. 1 Miller, Lots 40 and 41, sec. 231. M.I.M.
S. J. Sloan No. 1 Nash, Lot 102, Holdeman Subd., sec. 75. S.D. 1,892 ft.

Sandia—Jim Wells County

O. W. Killam No. 8 Wade, Blk. 40-A, Lopez de Jean Gr. D.S.T. 3,981-4,021 ft.; 400 lbs. gas and 90 ft. oily mud in 9 min.; sd. 4,013-21 ft.; flowing 3 B.P.H. on ¼-in. ck.
J. E. Walsh No. 2 Wade, Lot 2, Blk. C. Bode Subd. Stdg. 2,875 ft.

Kingsville—Kleberg County

Great States Oil Co. No. 1 Kivlin, Blk. 4, sec. 39. S.D. 2,485 ft.

Oakville—Live Oak County

Simmons O. & G. Co. No. 2-B Reagan Heirs, 451-ac. tr. Drlg. 1,217 ft.

Calliham—McMullen County

A. P. Lightfoot No. 9 Lark, Blk. 118, Scrugham Sur. Loc.
Loma Oil Co. No. 110-A Jacob, Sur. 516. D.&A., 945 ft.

Rhodes—McMullen County

Rowan & Hope No. 2 Edrington, 80-ac tr., Sur. 81. Set csg. 1,790 ft.; comp. 20,000,000 ft. gas.

Ina—Medina County

Ina O. & R. Co. No. 3 Viola Wilson, Durst Sur. S.D. 742 ft.

Agua Dulce—Nueces County

Lockhart Bros. No. 1 Elliff, 4,501 ft. E line, 466 ft. S line, 3,054.9-ac. tr., Antonio Longorio Gr. Sd. and sh. 6,863-67 ft.; T.D. sh. 6,912 ft.; swbg.
Stoddart & Moss No. 1 Colman, 330 ft. NW and NE lines, SE¼ SW 330-ac. tr., sec. 206, S.D. 6,885 ft.; blew out and closed in; to attempt comp. through drill stem.
Texon Drlg. Co. No. 2 Elliff, 5,580 ft. S line, 466 ft. E line, 3,054.9-ac. tr., Antonio Longorio Gr. Abd. loc.
Texon Drlg. Co. No. 2-B Sevier, 880-ac. tr., W. W. Chapman Lds., Palto Alto Gr. Set 16-in. csg. 300 ft.; T.D. 5,867 ft.; cutting stuck D.S.
United Prod. Co. No. 1 Harvey, 1,100 ft. W line, 1,050 ft. N line, tr., M. Garza Sur. Drlg. 5,487 ft.

Clara Driscoll—Nueces County

Blanco Oil Co. and Buchanan No. 1 W. S. Gandy, 330 ft. S and W lines, E½ sec. 60. Cg. 7,161 ft.
Hiram Reed No. 2 Roper, C Lot 1, sec. 108. Perf. 3,901-05 ft.; gas and wtr.; to P.B. and perf. in 3,800-ft. sd. W.O.W.
Houston Oil Co. No. 1 Sevier, 330 ft. S and W lines, 77.1-ac. tr., Quadrilla Irr. Co., Sur. Loc.
Magnolia Pet. Co. No. 2 Sevier, 330 ft. S and W lines, 80-ac. tr., R. Russell Sur. Sd. 3,818-21 ft. show oil; set csg.; W.O.C.
H. M. Reed No. 1 Holloway, 330 ft. S and E lines, 51.8-ac. tr., sec. 108. Perf. 3,-902-04 ft.; flw. brackish wtr.; S.D.
Texas Co. No. 1 C. D. Sevier, Wm. Gambel Sur. Drk.
Wellington Oil Co. No. 1-A Sevier, 125-ac. tr., Wm. Gamble Sur. Set csg.; T.D. 6,075 ft.; perf. 5,348-54 ft.; making dist. and gas; C.P. 1,875 lbs.; T.P. 1,950 lbs. Flowed 12 B.P.D. on 3/16-in. ck. then froze; reworking.
Wellington O. Co. No. 4 Sevier, 254-ac. tr., Wm. Gamble Sur. Sd. 3,809-15 ft.; comp. 834 B.P.D. on ⅜-in. ck.; T.D. 3,815 ft.
Wellington Oil Co. No. 14 Sevier, 254.7-ac. tr., Wm. Gambel Sur. Drlg. plugs in surf. csg.

Flour Bluff—Nueces County

Humble O. & R. Co. et al No. 2-A Miller, Blk. 25, sec. 47. Drlg. 6,447 ft.
Humble O. & R. Co. et al No. 1-B Miller, Blk. 5, sec. 48. Set csg. 6,654 ft.; W.O.C.
Humble O. & R. Co. et al No. 6 Phillips, Lot 11, Blk. 55. Drlg. sh. 2,330 ft.
Humble O. & R. Co. et al No. 2 Reed, Blk. 29, sec. 47. Set csg. 6,652 ft.; W.O.C.
Humble O. & R. Co. No. 2 Webster, Blk. 25, sec. 48. Drlg. sh. 5,908 ft.
S. Paul No. 1 Moulter, Blk. 16, sec. 41, Encinal Garden tracts. Loc.

London—Nueces County

Cosner & Cosner No. 1 Stockton, 330 ft. N and E lines, SW¼, NE¼, sec. 25. Loc.
Cosner & Cosner No. 2 Stockton, 330 ft. S and E lines, SW¼, NE¼, sec. 25. Loc.

Saxet Heights—Nueces County

Baltic Drlg. Co. No. 1 Dickson, Blk. 13, Oak Park Addn. Sd. 4,070-95 ft.; set csg. 4,095 ft.; W.O.C.
W. C. Brady No. 1 Guy, C Lot 45, Country Club Addn. R.U.
Callihan Bros. and Whitley No. 1 Hartley, Villareal Sur. R.U. and S.D.
Potter Pipe Line Co. No. 3 Cohen, 45-ac. tr., Villareal Sur. Sd. 4,057-86 ft.; set 7-in. csg. 4,086 ft.; W.O.C.
W. H. Harrison Drlg. Co. No. 1 Saunders, Blk. 13, Oak Park Addn. Drlg. 3,917 ft.
Chas. F. McGrew No. 3 Kelly, 19-ac. tr. Sd. 4,060-90 ft.; set csg.; S.O. jetted S.W.; S.D.
W. N. Paul No. 2 Schallert, C Blk. "C," Harbor View Addn. S.D. 1,800 ft.; W.O
Pedernal Oil Co. No. 1 John, Blk. 14, Oak Park Addn. S.D. 4,110 ft.; orders
Taylor Pet. Co. No. 7 Country Club, 83-ac. tr., Villareal Sur. Drlg. 2,557 ft.
S. E. Wilson No. 1 fee, Blk. 2, Oak Park Addn. Drlg. sd. 621 ft.

Saxet—Nueces County

C. Andrade & Renwar Oil Co. No. 7 Frank, Sur. 416. M.I.M.
Benson Drlg. Co. No. 1 Morgan, 330 ft. N and W lines, 40-ac. tr., Sur. 315 (W.O.). Old T.D. 4,483 ft.; R.U. to D.D.
Ben-Tex Oil Co. No. 2 Harmon, 990 ft. S line, 330 ft. E line, 50-ac. tr., Sur. 416. T.D. 6,485 ft.; washing to bottom.
R. B. Bryant No. 1 Gallagher, Sur. 25. R.U.
Bryant & Howell No. 1 Plachy, 330 ft. N line, 990 ft. E line lse., Smith Sur. 25. T.D. 4,825 ft.; P.B. to test sd. 4,190-4,225 ft. Comp. on pump, no gauge.
Bryant & Howell No. 1-A Kocurek, 330 ft. N line; 580 ft. E line 53-ac. tr., Sur. 25. T.D. 4,601 ft.; set csg. 4,423 ft.; perf. 3,850-62 ft.; flowed oil and S.W. and went dead; comp. 182 B.P.D. on pump.
Conservative Oil Co. No. 1-A R. Morgan, 80-ac. tr., Sur. 315. Set csg. on sd. 4,451-54 ft.; sdtrk. hole.
Conservative Oil Co. No. 4-B Morgan, 330 ft. N line, 1,984 ft. W line, lse., Sur. 403. T.D. 6,977 ft.; P.B. to test sd. 5,-740 ft., testing.
Crown Central Pet. Corp. No. 4-B Morgan, 80-ac. tr., Surs. 315 and 592. Sd. 4,444-45 ft.; set csg.; completing.
Crown Central Pet. Corp. No. 5-A Morgan, Sur. 315. Sd. 4,450-60 ft.; set 7-in. csg. 4,445 ft.; W.O.C.
Crown Central Pet. Corp. No. 2-C Morgan, 20-ac. tr., Sur. 315. Sd. 4,426-31 ft.; comp. no gauge.
L. Glasscock No. 3 Hunter, 990 ft. N line, 330 ft. W line, 160-ac. tr., Dunn Sur. 312. T.D. 1,200 ft.; blew out; shut in; stdg.
L. Glasscock No. 1-B Johns, 20-ac. tr., McGregor Sur. Sd. 4,856-64 ft.; set csg.; W.O.C.
Great States Oil Co. and Violet Oil Corp. No. 7 McGregor-Belk, Sur. 311, D.S.T. 6,318-26 ft.; recd. 1,000 ft. oil, 90 ft. S.W.; sd. 6,208-26 ft.; set csg. 6,326 ft.; cleaning into pits.
W. H. Harrison Drlg. Co. No. 1 Taggert, 50-ac. tr., Sur. 401. M.I.M.
Hiawatha O. & G. Co. No. 1 Hutchins-Stillwell, Lot 34, Sheppard Lds. Perf. 5,853-63 ft.; T.D. 5,871 ft.
Hiawatha Oil Co. No. 9 Hutchins-Stillwell, Lot 34, Sheppard Lds. Sd. 5,833-47 ft. S.O.; set 7-in.; W.O.C.
Hiawatha Oil Co. No. 4-A Smith, 98-ac. tr., Sur. 500. Sd. 5,802-32 ft.; comp. 136 B.P.D. on 5/32-in. ck.
W. B. Hinton No. 5 Cole, 330 ft. N line, midway between Nos. 3 and 4, 60-ac. tr., Villareal Sur. Loc.
Houston Oil Co. No. 12 McGregor, 135-ac. tr., Sur. 582. Set sur. csg. 1,390 ft.; drlg. plugs.
Houston Oil Co. No. 14 Morgan, 2,310 ft. S line, 330 ft. W line, 493-ac. tr. T.D. 4,865 ft.; perf. 4,415-26 ft.; rng. tbg. 4,426 ft.
Houston Oil Co. No. 17 Morgan, sec. 7, Rge. 5. Set csg. 4,556 ft.; comp. 189 B.P.D. on ⅝-in. ck.; sd. 4,552-56 ft.
Houston Oil Co. No. 18 Morgan, sec. 7, Rge. 5. Drlg. sh. and L. 1,906 ft.
H. H. Howell No. 2 Hutchins, 80-ac. tr., Sur. 416. Drlg. 6,213 ft.
H. H. Howell No. 1 R. Morgan, Blk. 3, Roberts Subd., Sur. 415. Drlg. 3,417 ft.
Magnolia Pet. Co. No. 5 Walton, Page Lds. Sur. Comp. 135 B.P.D. on ⅝-in. ck.; sd. 4,857-74 ft.
Maryland Corp. No. 6 Morgan, Sur. 592. Drlg. 2,737 ft.
Maryland Corp. No. 1 Stillwell-Sagarin, 4.4-ac. tr., Sur. 500. Drlg. 6,877 ft.
Morgan & Chapman Minerals No. 6 Morgan Clark, NE¼, Sur. 405. Drlg. 3,973 ft.
North Star Oil Co. No. 7 R. Morgan, W½ SE¼, Sur. 405 (workover). O.T.D. 5,835 ft.; to D.D. to 8,000 ft.
Oso Drillers, Inc., No. 4 Roark, 660 ft. E line, 1,200 ft. S line, 106-ac. tr., Villareal Gr. T.D. 7,218 ft.; P.B. 4,800 ft. sd.; perf. 4,894-98 ft.
Pan American Prod. Co. No. 7-A Morgan, 9-ac. tr., Sur. 403. Sd. 5,821-26 ft.; set csg.; W.O.C.
Pan American Prod. Co. No. 8-A Morgan, 89-ac. tr., Sur. 403. R.U.
Pan American Prod. Co. No. 4-A Sagarin, Sur. 500. Drlg. 5,793 ft.
Pan American Prod. Co. No. 4-B Sagarin, Sur. 500. Sd. 5,838-40 ft.; comp. 139 B.P.D.
Pan American Prod. Co. No. 3-B Smith. Sd. 5,830-48 ft.; set csg. 5,848 ft.; W.O.C.
Pan American Prod. Co. No. 3 Solar Sevier, 140-ac. tr., Sur. 311. T.D. 6,280 ft.; perf. 6,271-75 ft.; reperf. 6,276-78½ ft.; comp. 120 B.P.D. on 5/32-in. ck.
Pan American Prod. Co. No. 4 Solar Sevier, 140-ac. tr., Sur. 582. M.I.M.
Phillips Pet. Co. No. 5 Hutchins, 60-ac. tr., Blks. 29 and 30, Sheppard Farm Lots (W.O.). T.D. 6,742 ft.; reaming 6,600 ft.
Renwar & Maryland No. 6 Morgan. Sur. 315. Sd. 4,434-42 ft.; rng. tbg.
Republic Nat. Gas Co. No. 1 P. W. Alexander, 32.35-ac. tr., sec. 9, Rge. 5. T.D. 6,768 ft.; comp. dry gasser on ½-in. choke in 4,200 ft. sd.
Republic Nat. Gas Co. No. 3 A. Donigan, 240-ac. tr., secs. 6 and 7, Rge. 5. T.D. 4,568 ft.; sd. 4,560-68 ft.; comp. jetting 4 B.P.H.
Republic Nat. Gas Co. No. 4-A Donigan, 240-ac. tr., sec. 6 and 7, Rge. 6. Drlg. 2,421 ft.
Republic Nat. Gas Co. No. 17 Dunn, Blk. 37, Sheppard Farm Lots. Drlg. 5,862 ft.
Republic Nat. Gas Co. No. 2 Hutchins, 60-ac. tr., sec. 9, Rge. 5. Drlg. 1,397 ft.
Republic Nat. Gas Co. No. 3-A Morgan, sec. 405. Drlg. 1,780 ft.

Republic Nat. Gas Co. No. 3 Ordner, 100-ac. tr., sec. 403, Schaffer Farm Lots. Sd. 6,906-12 ft.; D.S.T. 6,895-6,912 ft; 900 ft. P.L.O.; comp. 128 B.P.H. on ¼-in. choke.; T.P. 2,150 lbs.; C.P. 2,600 lbs. ck.; C.P. 1,950 lbs.; T.P. 900 lbs.

Richardson Pet. Co. No. 15 Cain & Secrist, Blk. 23, Russell Farm Lots. Sd. 4,422-34 ft.; comp. 8 B.P.H.

Richardson Pet. Co. No. 20 Cain & Secrist, Blk. 23, Russell Farm Lots. Drlg. 4,123 ft.

Richardson Pet. Co. No. 5 Hoelscher, Blk 22, Russell Farm Lots. Testing sd. 4,-550-59 ft.

Richardson Pet. Co. No. 5 Perkins-La-Gasse, Blk. 26, Sheppard Farm Lots. Drlg. 6,357 ft.

Richardson Pet. Co. No. 4 Quiros, Blk. 40, Sheppard Lots. Drlg. 5,137 ft.

Richardson Pet. Co. No. 4 Sedwick, 185.4-ac. tr., Sur. 586. Drlg. 3,221 ft.

Southern Minerals Corp. No. 5 Mastin, Sur. 416. Drlg. 6,132 ft.

Southern Minerals Corp. No. 10 Smith, Lot 5, Sheppard Farm Lots. Sd. 4,543-50 ft.; completing.

Southern Minerals Corp. No. 12 Smith, Sheppard Farm, Blk. 9. Drlg. 4,123 ft.

Southern Minerals Corp. No. 13 Smith, Blk 4, Sheppard trs. Set sur. csg.; W.O.C.

Texon Drlg. Co. No. 4 Kocurek, 140-ac. tr., Sur. 316. Sd. 4,402-06 ft.; comp. 122 B.P.D. on 5/32-in. ck.

Texon Drlg. Co. No. 5 Vance, Thos. Gallagher Sur. R.U.

W.A.R. Oil Co. No. 4 Hoelscher, Blk. 22, Sheppard Farm Lots. Sd. 4,453-59 ft.; comp. 224 B.P.D. on 3/16-in. ck.

Stratton—Nueces County

Camp Prod. Co. No. 1 Wordner, 330 ft. E line, 1,280 ft. N line, sec. 12, Stratton Subd. S.D. fuel 2,200 ft.

Plymouth—San Patricio County

Magnolia Pet. Co. No. 11 Corpus Christi Bank, sec. 24, Fourth Addn., Taft Lds Drk.

Plymouth Oil Co. No. 65-C Welder, sec. 71 Tstg. 6,585 ft.; prep. deepen.

Plymouth Oil Co. No. 67-C Welder, sec 48. Set csg. at T.D. 5,620 ft.; comp. 203 B.P.D. on 9/64-in. ck.; sd. 5,605-20 ft.

Sun Oil Co. No. 5 Rossen, Lots 2 and 7, sec. 23, Fourth Addn. Set csg. 432 ft.; W.O.C.

Taft Field—San Patricio County

Atlantic Ref. Co. No. 3 Pullin, 330 ft. N line, 380 ft. W line, 40-ac. tr., Lot 4 sec. 1, Second Addn. R.U.

Cage Prod. Co. No. 6 Mayo, Ottman Sur. No report.

Cage Prod. Co. No. 7 Mayo, 9,560 ft. W line, 990 ft. S line, 60-ac. tr., Ottman Sur. Loc.

Esues Oil Co. No. 4 Britton, Lot 8, sec. 6, Third Addn. Set csg. 4,008 ft.; completing.

Esues Oil Co. No. 5 Britton, Lot 8, Sec. 6, Third Addn. Cg. 4,811 ft.

Humble O. & R. Co. No. 3 Flynn, sec. 1, 2nd. addn. Drlg. sh. 643 ft.

Humble O. & R. Co. No. 14 Mayo, Wm. Burns Sur. T.D. 4,923 ft.; comp. 103 B.P.D. on 9/64-in. ck.; T.D. 4,923 ft.

Humble O. & R. Co. No. 16 Mayo, 320-ac. tr., Ottman Sur. T.D. 4,916 ft.; comp. 104 B.P.D. on 9/64-in. ck.

Humble O. & R. Co. No. 18 Mayo, Ottman Sur. Drlg. sh. 3,875 ft.

White Point—San Patrico County

Crown Central Pet. Corp. No. 1 White Point Dev. Co., 100-ac. tr. D.S.T. 4,886-4,905 ft.; rec. 2,100 ft. oil; 10 ft. sd. and S.W.; 30 lbs. W.P. 15-min.; sd. 4,-900-05 ft.; set csg. 4,888 ft.; flowing 10 B.P.H. fluid 85 per cent S.W.

Alta Vista—Starr County

Moss & Heard No. 2 Ricaby, Porc. 83, J. of Camargo. D.&A. 1,374 ft

Barbacoas—Starr County

K. E. Merren et al No. 1 S.C.C.C., Blk. 34. Porc. 89. R.U.

Los Olmos—Starr County

H. C. Owens No. 1 Ivey, Porc. 87. R.U.

St. Marys O. & G. Co. No. 1 Seabury, Porc. 87. R.U.

Ted Stone No. 1 Kelsey-Bass, Porc. 87. . of Camargo. S.D. 440 ft.

Rio Grande City—Starr County

Clopton & Reed No. 1 Green, Porc. 80. Drlg. 312 ft.

Aviator—Webb County

Joe Palmer No. 1 Garcia, Sur. 463. R.U.

Cole—Webb County

O. W. Killam No. 49 Bruni, Blk. 5, Sur. 3. Cg. 2,817 ft.

O'Hern—Webb County

Cole Pet. Co. No. 98 Benavides, Blk. 11. Sur. 412. Drlg. 2,862 ft.

Hamil & Smith No. 2-A Bruni, Sur. 585. T.D. 2,908 ft.; comp. 45 B.P.D.

Hamil & Smith No. 4-A Benavides, Sur. 585. Drlg. 846 ft.

Magnolia Pet. Co. No. 20 S. Benavides, Hale Subd. T.D. 2,861 ft.; comp. 150 B.P.D.

H. M. Reed No. 4 Benavides, Blk. 29 Hale Subd. Swbg. 2,916 ft.

Starr Dev. Co. No. 1 Benavides, 330 ft. N and W lines, Sur. 173. M.I.M.

Sun Oil Co. No. 4 Brennan-Benavides, Blk. 507, Hale Subd. Sd. 2,940-51 ft.; W.O.C.

Texas Co. No. 4-A S. Benavides, Blk. 309, Hale Subd. Set csg. 2,909 ft.; W.O.C.

LaSal Vieja—Willacy County

Shell Pet. Corp. No. 1 Yturria, sh. 64, Carricitos Gr. Killed to rework; rig. screen and liner.

Charco Redondo—Zapata County

W. C. Bob No. 2 Martinez, S¼, Blk. 21 Quandudo Grant. Drlg. 421 ft.

Escobas—Zapata County

E. Calloway No. 1 Santos, Sh. 7, Fansler Part. Comp. 25 B.P.D.; T.D. 1,235 ft.

H. H. Coffield No. 5 Benavides, Sr. 34. Comp. 15 B.P.D.; T.D. 1,260 ft.

H. H. Coffield No. 6 Benavides, Sh. 34. Comp. 30 B.P.D.; T.D. 1,280 ft.

Glen Harroun No. 7 Garza, Blk. 10, Douglas, Sur. Comp. 30 B.P.D.; sd. 1,332-45 ft.

B. W. Roscoe No. 6 Bustamente, 197.3-ac. tr., Sh. 33, Loc.

Texas Co. No. 96 Jennings, Cerrito Blanco Gr. Drlg. sh. 1,177 ft.

Haynes—Zapata County

J. D. Long No. 1 Phelps, Villa Gr. R.U.

Magnolia Pet. Co. No. 5 Haynes, Blk. 7, Haynes Subd. T.D. 1,482 ft.; S.D.

Magnolia Pet. Co. No. 19 Haynes, Blk. 7, Haynes Subd. Comp. 50 B.P.D.; T.D. 1,-121 ft.

Magnolia Pet. Co. No. 20 Haynes, Blk. 7, Haynes Subd. Drlg. 577 ft.

Nordan & Morris No. 21 Haynes, Blk. 7, Haynes Subd. Drlg. 872 ft.

Magnolia Pet. Co. No. 22 Haynes, Blk. 7, Haynes Subd. Comp. 50 B.P.D.; T.D. 1,176 ft.

Magnolia Pet. Co. No. 23 Haynes, Blk. 7, Haynes Subd. Drlg. 597 ft.

United Prod. Co. No. 26 Haynes, Blk. 13, Gunby Subd. T.D. 1,613 ft.; D.&A.

Lopena—Zapata County

Ahler Bros. No. 1 Yzaguirre, Sh. 17, Porc. 15. Drlg. 536 ft.

Venture Pet. Co. No. 2 Ramerez, Blk. 3, Porc. 13. Loc.

Wm. H. Winn No. 1 Carlos Vela, Blk. 6, Porc. 20. R.U.

E. C. TEXAS WILDCATS

Anderson County

American Liberty Oil Co. No. 1 G. E. Gauge, Blackfoot area, B. Gilbert Sur. Austin Chalk 3,980 ft.; drlg. 4,230 ft.

Tide Water Oil Co. et al No. 7 Monnig, S. Sanchez Sur., deep test, Long Lake field. Top Georgetown 5,904 ft.

Angelina County

Ginter & Brown No. 2 Cope heirs, Jose Morin Sur., 3 mi. E of Dibol. M.I.R.

Hicks et al No. 1 Morris, J. Morris Sur., 3 mi. E of Dibol. S.D. 2,167 ft.

Summeral-Harris et al No. 1 M. L. Condrea, D. D. Maroney Sur., ¾ mi. W of Huntington. T.D. 1,472 ft.

Cherokee County

General Crude Oil Co. No. 1 O. A. Braley et al, J. Thomas Sur., 4 mi. E of Mt. Selman. Cg. 4,282 ft.

A. F. Richardson No. 1 F. P. O'Brien, G. S. Clapp Sur., 3 mi. NW of Rusk; 5,000-ft. test. Loc.

Dallas County

Mauldin Oil Co. No. 1 W. E. Howell, S. Layton Sur., 8 mi. E of Grapevine, 6 mi. W of Longmire. R.U.

Falls County

A. H. Bell et al No. 1 C. L. Trice, F. Mayham Sur., 1 mi. E of Lott. Top Austin 860 ft.; Buda 1,219 ft.; S.D. 1,220 ft.; bailed 15 bbls. oil.

R. M. Hefflin, No. 1 T. E. Battle, Marl Sur., 3 mi. SW of Marlin. S.D. 2,082 ft.

Thirteen Oil Co. No. 1 H. R. Roberts, N. Slatter Sur., 6 mi. SE of Lott, Pecan Gap 1,480 ft.; S.D. 2,143 ft.

Fannin County

Joiner & Owens No. 1 Goss-Morgan, J. Stephens Sur., 16 mi. N of Honey Grove. Fsg. 2,810 ft.

Styles & Smith No. 1 R. Stewman, J. W. Clark Sur., 2 mi. SE of Trenton. S.D. 588 ft.; elev. 724 ft.

Freestone County

Evert Drlg. Co. No. 1 O. W. Killian, E. J. Robins Sur., 6½ mi. SE of Fairfield. Base Austin 4,987 ft.; drlg. 5,350 ft.

Hunt County

Penn Oil Corp. No. 1 R. B. Parish, C 100-ac. tr., N. Dauley Sur., 7 mi. NE of Lone Oak. Drk.

Superior Oil Co. No. 1 P. D. Paul, Mary Latham Sur., 4½ mi. NE of Quinlan. Drlg. 5,400 ft.

Texola Land Corp. No 1. J. M. Goin, Jas. Merrick Sur., 2 mi. SW of Wolfe City. S.D. 40 ft.

Kaufman County

Scott & Woodside No. 1 W. and T. Nash, in J. Cortez Sur., 1 mi. E of Scurry. Loc.

Lamar County

Lowery-Cutler No. 1 E. C. Porter. Thos. King Sur. Top Georgetown 354 ft.; S.D. 2,500 ft.

Limestone County

A. W. Phillips et al No. 1 E. M. Speight, M. Herrin Sur., 6½ mi. SE of Mexia. S.D. 3,695 ft.

Rains County

Humble and Tide Water Oil Co. No. 1 Easter, R. Hotchkiss Sur., 5 mi. NW Alba. Cg. 8,275 ft.

Red River County

Carpenter Oil Corp. No. 1 J. M. Roberts, J. Ware Sur., 10 mi. NE of Clarksville. Drlg. 1,045 ft.

Roy I. Carter Drlg. Co. No. 1 J. A. Tutt C 40-ac. tr. in D. Hart Sur., 2 mi. S of Avery. S.D. 30 ft.

M. Petroff et al No. 1 R. G. Morris, J. Guest Sur., 2 mi. W of Detroit. S.D. 20 ft.

Robertson County

J. E. Mills No. 1 T. Congelosi, G. A. Nixon Sur., 3½ mi. SW of Hearne. S.D. 2,250 ft.; lost hole; skidded rig 40 ft. S.

Titus County

J. Z. Werby et al No. 1 Williams, 2 mi. E of Talco field, M.E.P.R.R. Sur. Drlg. 4,932 ft.

Van Zandt County

American Liberty Oil Co. No. 1 J. A. Freeman, John Walling Sur. Top Woodbine 3,160 ft.; Georgetown 3,835 ft.; drlg. 4,-037 ft.

Stroud & Lowe No. 1 P. L. McNeill, J. W. Guest Sur., 4 mi. N of Ben Wheeler. Drlg. 800 ft.

EAST TEXAS

(Border Counties)

Cass County

W. D. Ambrose No. 1 W. D. Chew, Robt Trammel Sur., Chew tr. Comp.; flw. 264 B.P.D.; T.D. 6,015 ft.

W. D. Ambrose No. 2 W. D. Chew, Robt. Trammel Sur., Chew tr. Comp.; flw. 204 B.P.D.; T.D. 6,014 ft.

Frank DeMayo No. 1 W. D. Chew, Robt. Trammel Sur. Drlg. 3,030 ft.

Gulf Oil No. 4 Dawson, J. H. Rives Sur., NW cor. lse. Drlg. 300 ft.

Magnolia Pet. Co. No. 1 Allday Est., P. Evans Sur., SE cor. 87-ac. tr. T.D. 6,035 ft.; drlg. out plug and tstg.

Magnolia Pet. Co. No. 2 Allday Est., P. Evans Sur. Comp.; flw. 399 B.P.D.; T.D. 5,907 ft.

Magnolia Pet. Co. No. 7 L. Haywood, P. Evans Sur., SW of No. 3. Drlg. 3,873 ft.

Magnolia Pet. Co. No. 8 L. Haywood, P. Evans Sur., NE of No. 2. Drlg. 3,368 ft.

Magnolia Pet. Co. No. 2 Lewis and Wicks No. 2, Cass Co. Sch. Ld. Sur., NW cor. tr. Drlg. 4,795 ft.

Magnolia Pet. Co. No. 3 Lewis and Wicks, Cass Co. Sch. Ld. Sur., E of No. 2. Drlg. 2,999 ft.

Magnolia Pet. Co. No. 4 Lewis and Wicks, Cass Co. Sch. Ld. Sur. Drlg. 2,960 ft.

Magnolia Pet. Co. No. 5 Lewis and Wicks, Cass Co. Sch. Ld. Sur., E of No. 4. 16-in. cmtd. 252 ft.; W.O.C.S.

Magnolia Pet. Co. No. 6 Lewis and Wicks, Alex Archer Sur. 10-in. cmtd. 2,050 ft.; W.O.C.S.

Magnolia Pet. Co. No. 7 Lewis and Wicks, Alex Archer Sur. Drlg. 697 ft.

Magnolia Pet. Co. No. 1 J. B. McLeod, Cass Co. Sch. Ld. Sur., NW cor. sur. Loc.

Magnolia Pet. Co. No. 8 Meda Green, J. Davenport Sur. 10-in. cmtd. 2,150 ft.; W.O.C.S.

Magnolia Pet. Co. No. 13 Meda Green, J. Davenport Sur. Drlg. 260 ft.

Magnolia Pet. No. 3 W. M. Hall, Wilson Robinson Sur. Drk.

R. W. Norton No. 1 Davis, H. Holbert Sur. Drlg. 3,221 ft.

R. W. Norton No. 2 Davis, H. Holbert Sur., NE cor. Drlg. 1,380 ft.

R. W. Norton No. 3 Davis, H. Holbert Sur. Drlg. 300 ft.

Ohio Oil Co. No. 8 Willis, S.F.I.W. No. 1,263 Sur. Drlg. 5,462 ft.

Ohio Oil Co. No. 13 R. P. Willis, S.F.I.W. Sur. No. 1,263. Loc.

Ohio Oil Co. No. 14 R. P. Willis, S.F.I.W. Sur. 1,263. Drlg. 5,837 ft.

Ohio Oil Co. No. 18 R. P. Willis, S.F.I.W. Sur. No. 1,263, 1,750 ft. W of No. 12. 7-in. cmtd. 5,923 ft.; T.D. 5,935 ft.; W.O.C.S.

Phillips Pet. Co. No. 5 Farrier, Wm. R. Myers Sur. Drlg. 5,425 ft.

Phillips Pet. Co. No. 6 Farrier, Wm. R. Myers Sur. 7-in. cmtd. 6,099 ft.; T.D. 6,120 ft.; W.O.C.S.

Phillips Pet. Co. No. 7 Farrier, Wm. R Myers Sur. Drlg. 4,095 ft.

Phillips Pet. Co. No. 8 Farrier, Wm. R. Meyers Sur. 16-in. cmtd. 255 ft.; W.O.C.S.

Texas Co. No. 5 W. M. Hall, A. Archer Sur. Drlg. 5,345 ft.

Texas Co. No. 6 W. M. Hall, A. Archer Sur. Drlg. 5,072 ft.

Texas Co. No. 7 W. M. Hall. Alex Archer Sur., NE cor. lse. 9-in. cmtd. 2,135 ft.; W.O.C.S.

Texas Co. No. 8 W. M. Hall, Alex Archer Sur., NW cor. lse. Drlg. 2,130 ft.

Texas Co. No. 6 N. A. Rambo, Cass County. Sch. Ld. Sur. Drlg. 5,301 ft.

Texas Co. No. 8 N. A. Rambo, Cass County Sch. Ld. Sur. 7-in. cmtd. 6,011 ft.; T.D. 6,037 ft.; W.O.C.S.

United Prod. Co. No. 1 G. W. Bibby Unit, A. Archer Sur. Comp.; flw. 30 B.P.H.; T.D. 6,115 ft.

United Prod. Co. No. 2 Bivens Unit, Jas Davenport Sur. T.D. 6,021 ft.; S.D. W.O.

United Prod. Co. No. 3 J. A. Bewley, H. Holbert Sur. Drlg. 5,464 ft.

United Prod. No. 4 J. A. Bewley, H. Holbert Sur. 7-in. cmtd. 5,960 ft.; T.D. 6,-000 ft.

United Prod. No. 5 J. A. Bewley, H. Holbert Sur. 7-in. cmtd. 5,980 ft.; T.D. 6,-005 ft.; W.O.C.S.

United Prod. No. 1-A J. H. Bewley, H. Holbert Sur. Comp.; flw. 22 B.P.H.; T. D. 6,000 ft.

United Prod. No. 2-A J. H. Bewley, H. Holbert Sur. Drlg. 5,587 ft.

United Prod. Co. No. 1 Bostick, J. Coleman Sur. Drlg. 300 ft.

United Prod. Co. No. 1 Davis Unit, Cass Co. Sch. Ld. Drlg. 2,965 ft.

United Prod. Co. No. 1 J. W. Land, R. Potter Sur., SW cor. 100-ac. lse. 9-in. cmtd. 2,320 ft.

United Prod. Co. No. 1 J. D. Parker, J. Coleman Sur. Drlg. 265 ft.

United Prod. Co. No. 5-A Tyson, J. H. Rives Sur. 7-in. cmtd. 6,019 ft.; T.D. 6,064 ft.; W.O.C.S.

United Prod. Co. No. 6-A Tyson, J. H. Rives Sur. T.D. 6,055 ft.; acidized.

United Prod. No. 1 S. B. Willis, Wilson Robinson Sur. Drlg. 5,412 ft.

United Prod. No. 2 S. B. Willis, Wilson Robinson Sur. No. 908. Drlg. 6,035 ft.

United Prod. No. 3 S. B. Willis, Wilson Robinson Sur. No. 908. Drlg. 5,853 ft.

Vaughn Prod. Co. No. 2 Willis, S.F.I.W Sur. 1,263. Comp.; flw. 72 B.P.H.; T.D 5,965 ft.

Harrison County

Geyer Oil Co. No. 1 Alex Moore, 5 mi. SW of Waskom, C. W. Fields Sur. W.O.S.R.

H. H. Roberts et al No. 1 Z. Douglas, Fields Sur. T.D. 2,485 ft.; prep. for prod. test.

Marion County

Arkansas-La. No. 1 W. S. Ford, Charles Grayson Sur., NE cor. Ford 204-ac. tr. Cg. 6,257 ft.

Arkansas-La. No. 1 Laura McIntosh, Edmondson Sur. Drlg. 300 ft.

Bauman, Dunn & Fischer No. 1 Chatten, A. D. S. Coy Sur., SE cor. R.U.

Sam Lanier No. 1 Lucey Hines, SE cor M. G. Wall Sur. T.D. 960 ft.; W.O.S.R.

Morefield & Prince No. 1 Benefield, NE cor. Robt. Potter Sur., 4 mi. W of Oil City, La. P.B. to 945 ft.; W.O.C.S.

Holcomb & Thomason No. 1 Lizzie Henderson, 330 ft. S and E, cor. Blk. 18, of Lizzie Henderson Subd., or 2,800 ft. S 3,450 ft. E of NW cor. of R. Bennington Sur. Perf. csg.; blew in as gas well; est. 75,000,000 ft.; S.D.; W.O.; T.D. 6,026 ft.

Panola County

Matex Oil Co. No. 1 Thomas M. Alstone 3 mi. E of Elysian field. T.D. 5,036 ft.; trying to run packer.

Sabine County

L. B. House et al No. 1 Bell, D. McDonald Sur. Drlg. 2,410 ft.

Shelby County

Wm. Redditt No. 1 Pickering Lbr. Co., SE cor. Stephens English Sur. S.D. 3,161 ft.; fuel.

H. A. Stebbinger No. 1 Pickering Lbr. Co. on 160-ac. tr. in A. Hanson Sur. Drlg 3,955 ft.

NORTH TEXAS WILDCATS

Archer County

L. T. Burns No. 1 Ikard, Blk. 5, Clark & Plumb Sur. R.U.R.

Hammond Oil Co. No. 1 Powell, H. A. Allen Sur. A-3. Spudded.

J. T. Miller No. 1 S. B. Herron, sec. 6 Clark & Plumb Sur. Drlg. 807 ft.

J. A. Self No. 1 Symank, sec. 11, L. & M. Pasture. Drlg. 1,420 ft.

E. J. Stump No. 1 Wilson B, sec. 1, B.B. B.&C. Sur. A-39. Drlg. 3,155 ft.

Clay County

Green Mt. Oil Co. No. 1 Staggs, sec. 34 A.C.S.I. Sur. Spudding.

R. N. Hamilton No. 1 Fred Wines, sec. 4, H. Dixon Sur. A-106. Spudding.

G. T. Morris No. 1 Boddy, T. Cook Sur. S.D.O. 810 ft.

Collin County

Sorrell et al No. 1 D. R. Clark, J. Rowland Sur. Spudded and S.D.

Cooke County

Wm. D. Compton No. 1 P. Tucker, J. Barnett Sur. A-42. Drlg. 800 ft.

B. H. Hilburn No. 1 W. A. Harris, J Harris Sur. A-502. Drlg. 1,705 ft.

Peterson et al No. 1 J. M. Floyd, Chas De Morse Sur. A-305. Drlg. 327 ft.

Ruble & Lowery No. 1 Dozier, Lot 12, F.C. S.L. Sur. Spudded.

United Producers Co. No. 1 J. G. Jones, L. S. Blair Sur. A-188. Drlg. 706 ft.

Denton County

Carlysle & Wilson No. 1 J. P. Knox, R Howard Sur. A-542. Gas sd. 1,950-55 ft; est. 10,000,000 ft.; rng. 5 3/16-in. at 1,950 ft.; tstd. 1,750,000 ft. gas; S.D.O.

J. C. Foster No. 1 Jeffcoat, J. West Sur. Drlg. 2,262 ft.

C. C. Minnick No. 1 C. N. Price, J. Doughtitt Sur. A-1,322. Fsg. 270 ft.

Mullen & Weil No. 1 Maxwell, J. Martin Sur. A-792. R.U.R.

Oil Finance No. 1 J. S. Gambill. S.D. 1,562 ft.

Renwaldt & Martin No. 1 Joe S. Gambill, J. B. January Sur. A-658. Drk.

J. Stogner No. 1 J. Maxwell, Jno. Morton Sur. A-792. Spudded and S.D.

Grayson County

F. Gailbreath et al No. 1 Singletary, Chas Quillian Sur. A-989. 6⅝-in. csg. 3,845 ft.; P.B. to sd. 3,862-75 ft.; bailing hole; show rainbow.

Red Wing Oil Co. No. 1 Mulder, J. Barefoot Sur. Drlg. 400 ft.

Olson et al No. 1 D. R. Ditzer, P. P. Cade Sur. A-301. Drlg. 3,910 ft.

Pete Shanor No. 1 Blair. Sd. 3,190-3,200 ft.; tstd. wtr.; S.D.O.

Hardeman County

Locke & Durham No. 1 Schoppa, sec. 57, H.&T.C. Sur., Blk. 16. Drlg. 110 ft.

Jack County

F. W. Bennett No. 1 Nichols, O.S. 3,065-20 ft.; 2,000 ft. O.I.H.; tstg.

Danciger O. & R. Co. No. 1 Kinder, B.S.&F Sur. A-83. Drlg. 2,160 ft.

Hamilton Pet. Co. No. 1 J. S. Rhodes, Wm Orr Sur. A-849, S.S.O. 2,362-61 ft.; tstg.

Mrs. D. P. Jack No. 1 Hardy, T.E.&L. Sur. No. 2,555. Drk.

Sam Shabay No. 1 J. S. Callis, S.P.R.R. Sur. A-575. Drlg.

Tillman et al No. 1 Jones, J. Helmstutter Sur. No. A-1,269. Drlg.

Montague County

Edgar T. Hart No. 1 W. L. Davis, sec. 12, Jack Co. Sch. Ld. S.D. 1,100 ft.

C. A. Lupton No. 1 Ball, T.E.&L. Sur. A-800. Derrick.

Montague Oil Co., Inc., No. 1 W. J. Bell, Sec. 2,882, T.E.&L. Sur. R.U. to drill old 3,500-ft. well to 6,000 ft.

Ventex Investments, Ltd., No. 1 S. E. Bell, sec. 11, M.E.P.&P. Sur. Drlg. 1,350 ft.

Throckmorton County

R. J. Williams No. 1 W. B. Parrott, T.E. &L. Sur., sec. 961, S.D.O. 2,520 ft.

Wichita County

H. W. Barton, Jr. No. 1 W. B. Honaker, R. Meade Sur. A-185. Drlg. 909 ft.

Humble O. & R. Co. No. 2 Parker, sec. 25, H.&G.N. Sur. Spudded and S.D.

King Oil Co. No. 1 R. W. Porter, sec. 32, H.&T.C. Sur. Drlg. 1,400 ft.

Lee Oil Co. No. 1 Fonville, sec. 323, Waggoner Co. Sur. R.U.R.

Palmer et al No. 1 McCarty, S. O. Fowler Sur. No. A-78. Fsg. 1,820 ft.

O. R. Tautenhahn No. 1 Kemp et al, sec. 58, K.W.V.F.L. Sur. Tstg. S.S.O. 1,822-26 ft.

United Prod. Co. No. 1 J. T. Harrell, Blk. 9, Denton Co. Sch. Ld. Sur. Spudding.

Wilbarger County

Bason Drlg. Co. No. 1 Waggoner, sec. 2, H.&T.C. Sur., Blk. 4. Drlg. 2,301 ft.

F. A. Lain No. 1 J. Coffee, sec. 44, H.&T.C. Sur. O.W.D.D.; cellar.

E. C. Lawson No. 1 Waggoner, sec. 103, H.&T.C. Sur. Drlg. 872 ft.

Peery Oil Co. No. 1 King, sec. 44, H.&T.C. Sur., Blk. 13. Spudded.

Phillips Pet. Co. No. 51 Waggoner, sec. 44, Blk. 4, H.&T.C. Sur. S.L. 3,074-76 ft.; 6⅝-in. 3,057 ft.; flwd. 100 B.P.H. on 3-hr. test.

Wise County

Latex Oil Co. No. 1 Smith, J. Couch Sur. Loc.

Texas-Canadian Dev. Co. No. 1 T. N. Maxwell, Isham Epps Sur. A-267. Drlg. 1,-399 ft.

Young County

Alexander & Long No. 1 Goldston, S.P.R.R. Sur. A-263. Drlg. 4,200 ft.

Helmerich & Payne No. 1 J. H. Rubenkoenig, J. Poitevent Sur. 9-227. S.S.O. 4,205-30 ft.; C.O. and testing.

J. E. Kadane No. 1 B. F. Manley, T.E.&L. Sur. 2,128. Drlg.

A. T. Strong No. 1 M. K. Graham, T.E.&L. Sur. 3,410. Spudded.

R. H. Vise No. 1 Dollins, T.E.&L. Sur. 615. Drlg. 3,310 ft.

C. V. Welch No. 1 Street, M. E. Criswell Sur. A-1,772. Fsg. 1,040 ft.

L. W. Wickes No. 1 McCluskey, Green Sur. Drlg. 4,200 ft.

Wootten & Wilson No. 1 S. J. Furr, sec. 36, T.E.&L. Sur. Loc.

Yorktex Pet. Co. No. 1 F. G. Burnett, G. W. Hills Sur. A-151. Treated with acid 4,020-80 ft.; swbg. acid from hole; showing wtr.; tstg.

Yorktex Pet. Co. No. 1 W. E. Steele, I.R.R. Sur. A-156. Spudding.

WEST TEXAS WILDCATS

Andrews County

American Liberty Oil Co. No. 1 Mayhew, sec. 23, Blk. A-51, P.S.L. Sur. Drlg. 4,762 ft.

H. S. Forgeron et al No. 1 Lockhart & Brown, C NE¼ sec. 20, Blk. A-41, P.S.L. Sur. Loc.

G. F. Getty, Inc., No. 1 R. H. Lindley, sec. 8, Blk. A-46. T.D. 4,642 ft.; ran tbg.; oil 31.7 grav.

Geo. F. Getty No. 1 Moxley. T.D. 4,642 ft.; shot; C.O.

Hannigan No. 1 Lotus Oil Co., sec. 18, Blk. A-48, P.S.L. Sur. S.D. 102 ft.

R. H. Henderson No. 1 J. E. Parker, sec. 25, P.S.L. Sur. A-43. T.D. 4,555 ft.; S.D.

Humble O. & R. Co. No. 1-B J. S. Means, 660 ft. from N and W, sec. 11, Blk. A-45, P.S.L. Sur. M.I.M.

Shell Pet. Corp. No. 1-E F. King, sec. 10, Blk. A-42, P.S.L. Sur. Drlg. 3,986 ft.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. T.D. 3,915 ft.; U.R. csg.

Crane County

Clark et al No. 1 Jordan, sec. 12, Blk. B-22, P.S.L. Sur. S.D. 3,710 ft.

Gulf Oil Corp. No. 2 McKnight, sec. 9, Blk. B-21. Drlg. 4,150 ft.

Gulf Oil Corp. No. 2 Snodgrass, sec. 1, Blk. B-25. T.D. 3,550 ft.; P.B. 3,521 ft.; shot and shut in.

J. Hertz No. 1-A Hughes, sec. 101. Drlg. 1,762 ft.

Sinclair Prairie Oil Co. No. 1 University, sec. 13, Blk. 35. Drlg.

Crockett County

Superior Oil Co. of Calif. No. 1 J. S. Todd, C SE¼ sec. 55, Blk. UV, G.C.&S.F. Sur. M.I.R.

Ector County

Bond & Harrison No. 1 Rumsey, sec. 35, Blk. 45, Twp. 1n, T.&P. Sur. S.D. 172 ft.

Sinclair Prairie Oil Co. No. 2-A Johnson sec. 48, Blk. 43, Twp. 1s, T.&P. Sur. T.D. 4,345 ft.; P.B. to 4,199 ft.; tstg. water shutoff.

Edwards County

Dan Auld et al No. 1 Rigsby, sec. 16, Blk. OK, G.C.&S.F. Sur., 15 mi. NE of Rock Springs. Spudded.

Fisher County

L. A. Daniels et al No. 1 J. J. Nickless. Drlg. 2,571 ft.

Forrest Dev. Co. No. 1 J. A. Scott, sec. 105, Blk. 2, H.&T.C. Sur. R.U.R.

Martin & Brubaker No. 1 Brown, W. E. Richardson Sur., sec. 4, Blk. R. S.D. 1,995 ft.

Southern Oil Co. No. 1 Robinson, sec. 172, Blk. 2, H.&T.C. Sur., 2½ mi. NE of Raton. S.D. 1,860 ft.

Gaines County

Amerada Pet. Corp. No. 1 Robbins, sec. 9, Sur. A-22. P.B. to 4,880 ft.; shot; testing; T.D. 4,940 ft.

Landreth Prod. Co. No. 1 C. Cobb, sec. 20, Blk. A-21. Drlg. 300 ft.

Stanolind O. & G. Co. No. 1 Morrow. T.D. 4,906 ft.; P.B. to 4,702 ft.; shot; swabbing hole.

Garza County

S. Caprito No. 1 Post Estate, sec. 230, Blk. 5, K. Aycock Sur. Drlg. 183 ft.

Glasscock County

Fleetborn Oil Co. No. 1 Black Arrow, sec 3, Blk. 34, Twp. 3s, T.&P. Sur. T.D. 1,805 ft.; U.R. csg.

Shell Pet. Corp. No. 1 McDowell, sec. 41, Blk. 34, Twp. 2s, T.&P. Sur. Drlg. 2,812 ft.

Hockley County

Texas Co. No. 1 B. Slaughter, Labour 83 League 38, Zavala Co. Sch. Lds. Drlg. 4,469 ft.

Howard County

R. A. Westbrook et al No. 1 G. T. West, sec. 48, Blk. 33, Twp. 1n, T.&P. Sur. S.D. 1,460 ft.; air blowout wrecked derrick.

Hudspeth County

Haymon Krupp Oil & Ld Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp. 6. Drlg. plug. 2,695 ft.

Jones County

H. D. Egger et al No. 1 O. Roberts, sec. 26, Orphan Asylum Lds. Drlg. 2,032 ft.

Fain-McGaha, Inc., et al No. 1 Lotspeick, sec. 40, Blk. 15, T.&P. Sur. T.D. 1,778 ft.; set csg.

Fain-McGaha, Inc., No. 1 Lewis et al, sec. 37, Blk. 15, T.&P. Sur. S.D. 1,525 ft.

Hugh King, Jr., No. 1 Harris, D. H. Stover Sur. No. 7. Drlg. 118 ft.

McMann et al No. 1 Dyer sec. 12, Blk. 2, S.P.R.R. Sur. Machine.

Oyster & Griffith No. 1 Bumpass, A. Jones Sur., 3 mi. SW of Truby. Drlg. 2,567 ft.

Oyster et al No. 1 King, N. Scott Sur. No. 14. S.D. 1,806 ft.

J. L. Reeves No. 1 Kelly, C. Martinez Sur., 1½ mi. N of Hawley. T.D. 2,251 ft; P.B. 2,225 ft.; tstg.

T. K. Simmons No. 1 E. A. Hicks, sec. 5, O.A. Lands Sur. T.D. 1,940 ft.; U.R. csg.

Snoddy & Snoddy No. 1 Harvey, sec. 9, Blk. 14, T.&P. Sur., 9 mi. S of Leuders. T.D. 1,630 ft.; shot; C.O.

Ungren & Frazier No. 1 J. J. Steele, sec. 11, Blk. 15, T.&P. Sur. T.D. 2,233 ft.; U.R. csg.

Loving County

Mason Oil Co. No. 2 M. Kyle, sec. 20, Blk. 55, Twp. 1s, T.&P. Sur. Avgd. 316 bbls. day per week while C.O.; T.D. 3,903 ft.; shut in.

Nolan County

Dr. Robinson Co. No. 1 E. Gabler, sec. 26, Blk. X, T.&P. Sur. Drlg. 3,400 ft.

Pecos County

Bahan & Rhodes No. 1-B Bonebrake, sec. 116, Blk. 8, H.&G.N. Sur. T.D. 2,290 ft.

Hightower Oil Corp. No. 1 Holmes, sec. 6, Blk. C-3, E.L.R.R. Sur. Drlg. 2,467 ft.

Humble O. & R. Co. No. 1 E. M. Gray, sec. 94, Blk. 11, G.H.&S.A. Sur.; 5,000-ft. test. Drlg. 1,000 ft.

Lee Pet. Corp. et al No. 1 J. L. Nutt, sec. 1, W. D. Henley Sur. Drlg. 1,757 ft.

E. R. Minshall, No. 1 Banker, sec. 25, Blk. 146, T.&St.L. Sur. T.D. 2,815 ft.; drlg. by tools.

Pinerock Oil Co. No. 1 White & Baker, SE cor. sec. 5, Blk. 207, T.C. Sur. Loc.

S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. 4,361 ft.

Union Oil & Mining Co. No. 1-A Magnolia, sec. 5, Blk. 9, H.&G.N. Sur. Drlg. 1,012 ft.

Young No. 1 Bailey, sec. 23, Blk. 178, T.C. R.R. Sur. S.D. 1,900 ft.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. Crooked hole 170 ft.

A. H. Main No. 1 Greenlee, sec. 40, Blk. 347, 13 mi. NE of Marfa. Machine.

Reagan County

Bahan & Rhodes No. 1 Kloh, sec. 37, Blk. 37, Twp. 5s, T. & P. Sur., NW cor. of county. Drlg. 2,932 ft.

Reeves County

Grisham & Hunter No. 1 Montgomery, sec. 1, W.R. King Sur. Drlg. 626 ft. in new hole.

J. C. Hill et al No. 1 Ely, 1,320 ft. from N and W, sec. 38, Blk. 71, P.S.L. Sur. Loc.

Schleicher County

J. M. Cooper No. 2 Page. Loc.

Mangus Oil Co. No. 1 Judkins & Spencer, C SW¼ sec. 4, W. W. Russell, grantee. Elev. 2,209 ft.; T.D. 6,527 ft.; P.B. 5,912 ft.; shot 145 qts. from 5,814-5,920 ft.; C.O.

Scurry County

Bristow & Cantrell No. 1 Tomlinson, sec. 122, Blk. 97, H.&T.C. Sur. Drlg. 122 ft.

Taylor County

Superior Oil Co. of Tulsa No. 1 Cook Hrs. Drlg. 3,878 ft.

Terrell County

Ohio Oil Co. No. 1 M. H. Goode, sec. 26, Blk. 161, G.C.&S.F. Sur. Drlg. 8,579 ft.

Terry County

W. L. Pickens et al No. 1 Lewright, sec. 1, Blk. C-37, P.S.L. Sur. T.D. 4,590 ft.; R.U.S.T.

Upton County

J. H. Myles & Son No. 1 Hughes, sec. 91, Blk. Y, G.C.&S.F. Sur. Drlg. 1,021 ft.

Dan Short No. 1 Webb, sec. 174, Blk. E, C.C.S.D.&R.G.N.G. Sur. S.D. 875 ft.

Ward County

Moran et al No. 1 Reynolds, sec. 21, Blk. 5, H.&T.C. Sur. S.D. 850 ft.

L. F. White et al No. 1 Rector-Monroe, E cor. sec. 3, Blk. 1, W.&N.W. Sur. Loc.

Wood et al No. 1 Boogher, sec. 8, Blk. 32, H.&T.C. Sur. Drlg. 1,759 ft.

Winkler County

Read & Duffey No. 1 Sealey, sec. 8, Blk. A, G.M.M.B.&A. Sur. S.D. 4,520 ft.

Richardson No. 1-B Walton, sec. 20, Blk. 77, P.S.L. Sur. Loc.

J. R. Sharp No. 1 Walton, sec. 19, Blk. 77, P.S.L. Sur. Drlg. 2,365 ft.

York & Harper et al No. 1 Gunter & Munson, sec. 7, Blk. C, G.M.M.B.&A. Sur. Drlg. 1,465 ft.

Yoakum County

Bahan et al No. 1 Shook Est., sec. 420, Blk. D, John H. Gibson Sur. Loc.

RANGER (CENTRAL TEXAS) DISTRICT

Callahan County

Canyon O. & G. Co. No. 1 J. O. Kidd, R. A. Pennell Sur. No. 755, 4 mi. NW Cross Plains. Drlg. 365 ft.

A. R. Forster No. 1 C. B. Snyder, NW cor. NE¼ county, sec. 139, B.B.B.&C. Sur. Loc.

Mesa Verde Oil Co. No. 1 Klepper, 3 mi. N Clyde, sec. 69, B.B.B.&C. Sur. Top sd. 1,626 ft.; set csg.; T.D. 1,652 ft.; shot with 10 qts.; C.O.

Coleman County

Anzac Oil Corp. et al No. 1-H Morris, 12 mi. NE Coleman, J. Harris Sur. No. 77. Drlg. 1,700 ft.

Midfield Oil Co. No. 1 T. H. Ward, sec. 274, W. Echels Sur. S.D.O. 1,500 ft.

Eastland County

J. T. Anderson No. 1 Crist, 8 mi. N of Rising Star, 1,400 ft. from S and 700 ft. from W lines, NW¼ sec. 36, Lavaca Co. Sch. Lds. Spudded.

F. J. Estes No. 1 Gentry, A. Popejoy Sur. S.D. 2,500 ft.

Hoffman & Page No. 1 Dodd, 5 mi. S of Ranger, 330 ft. from N and W lines, Subd. 11, William VanNorman Sur. Loc.

States Oil Corp. No. 1 H. S. Schmick, 1 mi. NE Eastland, SE¼ sec. 1, H.&T.C. Sur., Blk. 4. R.U.

Hamilton County

Seaboard Oil Co. No. 1 fee, A. C. Grimes Sur., 10 mi. N of Huntington. Top Ellenberger 4,144 ft.; rmg. 4,335 ft.

Palo Pinto County

D. H. & C. Drlg. Corp. No. 1 Davenport, 6 mi. SE Palo Pinto, L. F. Margaret Sur. A-309. T.D. 2,000 ft.

Paul Garrett No. 1 Mabry heirs, NE cor county, sec. 2,572, T.E.&L. Sur. S.D. 600 ft.

Shackelford County

Danciger & Pearson No. 1 Swenson, 2 mi. NW Morris-Buie pool, Williams Sur., Abst. 1,543. Collapsed csg. 1,345 ft.

Danciger O. & R. Co. No. 1 McCowan, NW cor. county, 220 ft. from E and 1,036 ft. from S lines sec. 158, B.B.B.&C. Sur. R.U.

Dean Bros. et al No. 1 Newell C, sec. 87, E.T.R.R. Sur., 1 mi. SW Cook pool. Drlg. 350 ft.

Green, Jones & Stasney No. 1 Davis, 7 mi. S. Morris-Buie pool, sec. 29, T.&P. Sur., Blk. 13, Rng. 8¼-in. 1,160 ft.

Iron Mountain Oil Co. No. 1 Ivy, NW cor. county, 220 ft. from S and W of NW¼ of SW¼ sec. 159, B.B.B.&C. Sur. Drlg. 650 ft.

Frank Oyster et al No. 1 J. C. Swenson, 7 mi. N Morris-Buie pool, C SE¼ of NW¼, sec. 14, A.B.&M. Sur., Abst. 780. Drlg. 250 ft.

Reliance Oil & Roy. Co. No. 15 G. R. Davis, sec. 6, T.&P. Sur., Blk. 13, 4 mi. S of Bluff Creek pool. Drlg. 1,290 ft.

Ungren & Frazier No. 1 McCowan, NW cor. county, 220 ft. from E and 1,476 ft. from S of sec. 158, B.B.B.&C. Sur. R.U.

Ungren & Frazier et al No. 1 Snyder, 3 mi. SW Sedwick, sec. 26, L.A.L. Sur. Ellenberger test. Drlg. 1,650 ft.

Stephens County

Aarco O. & G. Co. No. 1 Atkins, 2½ mi. E Crystal Falls, 2,196 ft. from S, 330 ft. from W of sec. 1,129, T.E.&L. Sur. Loc. for 4,000-ft. test.

C. B. Christie et al No. 1 E. S. Maury, 4 mi. W of Crystal Falls, J. Koehler Sur., Abst. 26. T.D. 3,600 ft.; S.D.

W. T. Garret et al No. 1 Echols, 6 mi. SE of Ivan, W½, sec. 10, Blk. 3, S.P.R.R. Sur. T.D. 3,325 ft.; fsg. bit; shot 700 qts. 3,118-3,310 ft.; C.O.; T.D. 3,320 ft.; S.D.

Hanrahan & Bedingfield No. 1 Guest, 2 mi. NW Frankell, sec. 30, T.&P. Sur., Blk. 6. Spud. and S.D.

Tarrant County

E. E. Hoffpauir et al No. 2 W. H. Davis, 2 mi. S Arlington, H. Blackwell Sur. Drlg. 1,821 ft.

Taylor County

Hal Hughes et al No. 1 Manahan, 5 mi. S Abilene, sec. 14, L.A.L. Sur. R.U.

Throckmorton County

R. J. Williams et al No. 1 W. B. Parrott, 4 mi. NW of Woodson, sec. 961, T.E.&L. Sur. S.D. 2,612 ft.

Wise County

Latex Oil Co. No. 1 Smith, 3 mi. E Bridgeport, Jas. Couch Sur., Abst. 104. Drlg. for 4,200-ft. test.

Texas-Canadian Dev. Co. No. 1 T. N. Maxwell, NE cor. county, Isham Epps Sur. Drlg. 1,925 ft.

Drilling Contractors

(Continued from Page 201)

the Tomball field for same company on the Ziegler lease.

Loffland Brothers were making preparations to make another test of Continental Oil Co. No. 1 O. C. Hebert in Vermilion Parish after approximately 11,675 feet of 2½-inch drill stem tubing was recovered. The tubing was recovered by using a special 1¼-inch drill stem inside of the 2½-inch tubing which was used as cutting tool. The hole is being cleaned and the well is expected to be tested this week. This is next to the deepest test ever drilled in the world, being bottomed at 12,216 feet.

Rocky Mountain Runs

Estimated daily average production for the week ending February 20:

WYOMING

Salt Creek	16,030
Big Muddy	1,370
Byron	3,810
Dallas Derby	530
Elk Basin	560
Frannie	2,210
Garland	2,640
Grass Creek	1,970
Hamilton dome	360
Hidden dome	500
Hudson	270
LaBarge	1,110
Lance Creek	11,290
Lost Soldier	1,120
Medicine Bow	2,100
Oregon Basin	2,200
Osage	670
Quealy dome	610
Rock River	1,690
South Casper	350
Poison Spider	230
Miscellaneous	330
Total Wyoming	51,950

MONTANA

Buckley Border	170
Cat Creek	570
Cut Bank	9,650
Kevin Sunburst	3,800
Lake Basin	40
Pondera	1,120
Total Montana	15,350

COLORADO

Florence	130
Fort Collins and Wellington	270
Iles dome	2,990
Moffat	420
Orchard	40
Rangely	80
Tow Creek	130
Total Colorado	4,060

NEW MEXICO

Cooper	7,155
Eaves	860
Eunice	29,176
Hardy	949
Hobbs	21,534
Jal	1,740
Langley	1,080
Lynch	891
Lynn	184
Mattix	852
Monument	23,136
North Monument	57
Penrose	1,488
Skelly	913
South Eunice	885
Vacuum	90
Artesia-Maljamar	3,065
Getty	500
Hogback	200
Rattlesnake	750
Table Mesa	75
Aztec-Bloomfield	10
Total	95,590
Total all fields	166,950

California Fields

(Continued from Page 225)

good for only 16 bbls. of 19.6 gravity oil per day. In addition to the small production registered the well's production is cutting around 70 per cent indicating the probability that the company may find it necessary to undertake some corrective work.

Premier

In the Premier section of the Kern River field, Standard Oil Co. completed No. 9-3 in section 9-28-27 pumping 196 bbls. of 15.5 gravity oil and 65 bbls. of water daily from 2,845 feet after the hole had been finished with an 8⅝-inch liner carrying 63 feet of perforated. Standard has started a new well on this lease and will maintain normal development as long as commercial production is assured. Golden Bear Oil Co. and Cedar Oil Co. are expected to make production tests on their wells under way in the Premier area within the next few days as both are making preparations to rig up pumping equipment. Out in the west front of the Kern River field Standard Oil Co. has hit the pay in No. 3 Ward fee in section 24-38-27 and California Star Oil Co. is running liner preliminary to an early production test.

Gas Fields

In the Rio Vista gas field of Solano County, Amerada Petroleum Corp. finished No. 1 Drouin in section 26-4-2 flowing 40,000,000 feet of dry gas per day from 4,500 feet. The hole was finished with an 8⅝-inch water string landed and cemented at 4,216 feet and 299 feet of 6⅝-inch liner which froze at 4,419 feet exactly 81 feet off bottom. In the McDonald Island gas field of San Joaquin County, Standard made a formation test of No. 1 Tilden Community in section 31-2-5 and with the tester set at 5,250-5,312 feet and open for eight minutes found the well capable of producing 15,200,000 feet of dry gas per day. Top of the gas sand was logged at 5,254 feet and drilling operations were concluded at 5,312 feet.

Coyote-Rosecrans

In the East Coyote field of Los Angeles Basin, Bartholomae Oil Corp. completed No. 3 Stern and this new well was brought in flowing 388 bbls. of 26.7 gravity oil cutting 10 per cent water. No. 3 Stern was bottomed at 5,097 feet and finished with a 6⅝-inch combination string landed in the bottom of the hole. The 6⅝-inch following the failure to encounter deep production was subsequently perforated at 4,760-4,952 feet opposite the productive zone at this depth.

San Joaquin Basin

In the Lost Hills field Associated Oil Co. completed No. 10-A-3 Williamson in section 11-26-20 pumping 372 bbls. of 14.1 gravity oil daily from 1,426 feet after the hole had been finished with a 6⅝-inch liner carrying 60 feet of perforated. Standard Oil Co. has started a second well on the United lease in this field and will complete it in the shallow zone in which the company recently finished No. 1 United as a good well. This development centers in the extreme western tip of the Lost Hills structure. In the Kettleman North Dome field, the Kettleman North Dome Association, shortened to "Kenda," has completed No. 63-28-J in section 28-21-17 but the initial daily production, 175 bbls. of 30.1 gravity oil and 240,000 feet of natural gas was somewhat below expectations.

Los Angeles Basin

In the Long Beach field Exeter Oil Co. recompleted No. 1 Walker and returned it to production pumping 72 bbls. of 24.1 gravity oil per day. In the Torrance field Chanslor Canfield Midway Oil Co. recompleted No. 18 Del Amo after redrilling and deepening to 4,467 feet at which depth it was finished pumping 50 bbls. of 18.1 gravity oil daily. This well was originally completed at 3,679 feet. Barnsdall Oil Co. has not yet listed No. 1 San Francisco in section 26-3-17, Newhall district as completed. Officials of the company are satisfied with the performance of the well and an early completion is expected although the hole may be cored ahead a little further before hooking up to gas traps and tanks for a conclusive test.

Ventura Basin

Associated Oil Co. No. 12 McGonigle which was completed several weeks ago from a depth of 10,569 feet and having a 7-inch water string landed at 10,007 feet has shown a consistent increase in production and at present is flowing 907 bbls. of oil and 900,000 feet of natural gas per day. In the Shiells Canyon district of Ventura County, Petroleum Securities has acquired a sublease from the Calumet Oil Co. covering the latter's entire holdings approximating 650 acres. In the Padre Canyon field of Ventura County General Petroleum Corp. has recompleted No. 1 Padre after redrilling and deepening the hole to 5,403 feet from which depth the well was returned to production pumping 235 bbls. of 29.1 gravity oil cutting 5 per cent. General Petroleum has staked location for two new wells to be drilled in the Capitan field of Santa Barbara County and Shell Oil Co. has started rig construction for No. 20 Covarrubias Lease No. 1.

Central West Fields

(Continued from Page 226)

through the Maxon sand at 840-50 feet and was abandoned after making 15,000 feet of gas when the hole filled with water.

In Lee Township, fraction 34, B. Johnson is rigged up for No. 5 on the Anna Snow lease. In section 23, Lodi Township, Ohio Fuel Gas Co. completed the second test on the A. C. Creamer farm in the second Berea sand at 1,542-49 feet. This test was brought in as a small gas well.

INDIANA FIELDS

In Vanderburg County, section 31, German Township, K. R. Bixby, trustee, No. 5 Christ Ziss was drilled to a total depth of 1,251 feet and had a production of 25 bbls. the first 24 hours after a shot. In the same township, NE NW of section 26, P. E. Tichenor No. 1 John Schaefer was abandoned as a failure at a total depth of 1,200 feet.

In Posey County, Center Township, Carl Michel and George Nelson are drilling a test on the Emmer Aldridge farm, in the NE SW of section 1. In Lynn Township, SW NW of section 13, Carl Michel is drilling a test on Henry Pfeifer lease.

Staves Drilling Co. is drilling a test on the John Bretz heirs property in the NW SW section 35, Ohio Township, Spencer County. In section 13, Grass Township, Hollingsworth Oil & Gas Corp. is drilling below 970 feet in the test on the Patrick Axton and wife lease. In Huff Township, section 6, George Beauchamp is drilling No. 3 on the John Heintz lease.

Canadian Fields

(Continued from Page 227)

tween Turner Valley Royalties No. 1 and B. & B. Co. No. 1, has spudded. Cable tools are being used, with Roy Widney in charge. Richland No. 2, LSD 5, same section, is standing at 4,050 feet, waiting for casing. Richland No. 3, LSD 14, is below 4,300 feet after running 10¾-inch casing.

Share Royalties No. 1, LSD 8, section 29-18-2w5, has let drilling contract to Glen Boller. Davies Petroleums No. 1, LSD 2, same section, is rigging with heavy duty standard tools. Location is slightly more than one-quarter mile southwest of B. & B. Co. No. 1. Madison Oils, Ltd., which owns the acreage, has an overriding royalty and a 5 per cent stock interest. Sunburst Oil Co. No. 1, N half LSD 1, same section, has let drilling contract to Pat Adams, who is moving rotary outfit to location.

In section 20-18-2w5, Monarch Royalties No. 1, LSD 9, is below 700 feet. In section 9-18-2w5, National Petroleum Corp. No. 2, LSD 14, the farthest south test in the field, is rigged ready to spud.

Okalta Development Plans

Arrangements made by Okalta Oils, Ltd., of Calgary for development of its extensive holdings on the southwest flank of Turner Valley involve the early drilling by various companies and syndicates of 10 wells, in sections 16, 18 and 20-18-2w5, with an additional 10 wells later in the year. Under uniform agreements, each operating company must start a well within the next few months, and a second well within a definite period after completion of the first one. Leases are subject to 10 per cent production royalty, with 15 per cent where a well exceeds 500 bbls. a day.

In section 32-18-2w5, west of the Sterling Pacific producers, Anaconda Oil Co. has arranged for tests in LSD's 5 and 11.

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	....	....	....	$.80	$.76	$.76	$.77	$.78	....	....	$.70	$.70	$.70	....	....	$.70	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	....	.82	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	....	.85	.76	.78	.77	.78	....	$.70	.74	.74	.71	$.70	....	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	....	.88	.78	.92	.77	.80	....	.70	.78	.78	.72	.70	....	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	....	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	....	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	....	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	....	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	....	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	....	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	....	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	....	.87	.89
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	....	1.02	.95	....	.89	.99	.86	.88	1.01	.98	.90	.83	....	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	....	1.05	.98	....	.92	1.03	.90	.91	1.06	1.02	....	....	....	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	....	1.02	....	.96	1.06	.95	.95	1.10	1.06	....	....	....	.95	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	....	1.06	....	.99	1.10	.99	.99	1.15	1.10	....	....	....	.97	....
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	....	....	1.09	....	1.03	1.14	1.03	1.02	1.20	1.14	....	....	....	.99	....
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	....	....	....	1.07	1.17	1.08	1.06	1.25	1.18	....	....	....	1.01	....
31-31.9	....	....	....	....	1.24	Pipe	1.24	1.22	.97	Ship	....	....	....	1.11	1.21	1.12	1.09	1.29	....	....	....	....	....	....
32-32.9	....	....	....	....	1.27	Line	1.27	1.27	1.00	....	....	....	....	1.14	1.25	1.16	1.13	1.34	....	....	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.28	....	....	....	1.18	1.28	1.20	1.17	1.38	....	....	....	$1.19	....	....
34-34.9	....	....	....	....	....	....	....	1.37	....	1.32	....	....	....	1.22	1.32	1.25	1.20	....	....	....	....	1.23	....	....
35-35.9	....	....	....	....	....	....	....	1.42	....	1.35	....	....	....	1.25	....	1.29	....	....	....	....	....	1.27	....	....
36-36.9	....	....	....	....	....	....	....	1.46	....	1.39	....	....	....	1.29	....	1.33	....	....	....	....	....	1.31	....	....
37-37.9	....	....	....	....	....	....	....	1.51	....	1.43	....	....	....	1.32	....	1.37	....	....	....	....	....	1.35	....	....
38-38.9	....	....	....	....	....	....	....	1.56	....	....	....	....	....	1.36	....	1.42	....	....	....	....	....	1.39	....	....
39-39.9	....	....	....	....	....	....	....	1.61	....	....	....	....	....	1.40	....	....	....	....	....	....	....	1.43	....	....
40-40.9	....	....	....	....	....	....	....	1.66	....	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over.

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 28, 1937)

East Texas*	$1.27
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*All companies, †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

West Texas

See gravity table.	
Pecos County*	.91
Pecos shallow†	.81

*Shell Petroleum Co., Gulf Pipe Line Co., and Humble Oil & Refining Co. †Shell Petroleum Corp.

Gulf Coast

(January 28, 1937)

Choctaw and Darrow, La.	See note below
Clay Creek, Tex.	$1 00
Garden Island, La.	1 37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Tomball, Tex.	1.30
Lafitte, La.	1.24
Livingston, Tex.	1.27
Satsuma	1.20
Heyser, light (Nov. 1, 1936)	1.15
Heyser, heavy (Nov. 1, 1936)	.90
Placedo (Nov. 1, 1936)	.90
Welsh, La.	.98
Tepetate (La.) (Jan. 4, 1937)	1.12

Greta, Refugio, O'Connor, McFadden, Saxet, Segno, Taft, Tom O'Connor and Plymouth take same gravity prices as Gulf Coast. Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.13
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light*†	1.30
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	.62
Hamilton Dome, Wyo. (Nov. 4, 1936)*	.57
Elk Basin, Wyo., light*†	1.30
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light	.82
Hogback, N. Mex.*	1.33
Pondera, Mont. (Jan. 26, 1936)*	1.05
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1 23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. Mex.	.90
Maljamar, N. Mex.	.90
Canon City and Florence, Colo.	1 10
Florence, Colo.	.98
Lance Creek, Wyo.	.97
Sunburst, Mont. (June 5, 1936)	1.20
Cat Creek, Mont.	1.40
Cut Bank, Mont.	1.35

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

Middle Western States

OHIO OIL CO
(Effective January 28, 1937)

Lima	1.25
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich.	1.42
West Branch, Mich.	1.26
Arenac, Mich.	1.26
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River	1.42
Kentucky River	1.50
Western Kentucky	1.40

Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp., effective Jan. 29. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky.

Southwest Texas

(January 28, 1937)

Pettus	1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Luling	1.00
Lytton Springs	1.12

Saxet and Taft take same gravity table as Gulf Coast.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.52
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90

Eastern States

TIDE WATER PIPE LINE CO.
(Effective Feb. 24, 1937)

Bradford, Pa.	$2.67
Allegany, N. Y.	2.67

SOUTH PENN OIL CO.
(Effective Feb. 24, 1937)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.67
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.42
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.37
Pennsylvania Grade Oil in Buckeye Pipe Line lines	2.22
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Sept. 18, 1936)	1.32

PENNZOIL CO.
(Effective Feb. 24, 1937)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	2.67
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	2.66
Includes Tidioute district.	
Group C	2.65
Includes Turkey and Tidioute districts.	
Group D	2.64
Includes Bear Creek and Porkey districts.	
Group E	2.61
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

Price depends on lengths of pipe line haul to plant at Oil City.

PURE OIL CO.
(Effective Feb. 24, 1937)

Cabin Creek, W. Va.	2.37
Bradford Hollow, W. Va.	2.37
Kelly Creek, W. Va.	2.37

Canada

Ontario (Sept. 9, 1933)*	
Petrolia	$2.10
Oil Springs	2.17
Turner Valley, Alberta province (Dec. 16, 1936):†	
Clear naphtha	$2.60
Discolored naphtha, 65 gravity and higher	2.36
Discolored naphtha and crude oil, 40-40.9 gravity	1.55
Increasing 3 cents for each degree of gravity with top price for 64-64.9 gravity	2.27

These prices delivered field tankage.
*Imperial Oil, Ltd.
†Imperial Oil, Ltd., and Regal Oil & Refining Co. On crude oil alone British American Oil Co. posted above prices on December 9, 1936.

Mexico

Panuco*	$1.07

*In U. S. Currency, f.o.b. ship, based on January spot market transactions.

Crude Price Changes

Tide Water Associated Oil Co. is now posting prices in the St. Martinsville field in Coastal Louisiana. Making the prices retroactive to January 28 the company pays $1.14 per bbl. for oil below 30 degrees in gravity; $1.16 for 30 gravity, with 2 cents added for each degree upward to and including 34 degrees and above, at $1.24.

West Texas Completions

Week Ending February 20

Andrews County

Humble Oil & Refining Co. No. 13 J. S. Means, 4,517-43 feet, shot and acidized, 241 bbls.; No. 14 J. S. Means, 4,510-35 feet, acidized, 525 bbls.

Crockett County

Anderson Oil Co. No. 1 Shannon, dry and abandoned 1,644 feet. Texas Pacific Coal & Oil Co. No. 1 Blair, dry and abandoned 1,865 feet, elevation 2,269 feet.

Edwards County

Plateau Oil Co. No. 1 Hatch, dry and abandoned 5,160 feet, elevation 2,313 feet.

Howard County

Imperial Oil Co. No. 9 Hooks, 3,223 feet, 1,140 bbls. Merrick & Bristow No. 8 Hooks, 3,261 feet, 576 bbls. Holman No. 4 Kloh-Abrams, 2,496-2,506 feet, acidized, 1,344 bbls., 5 per cent water. O. M. Murray and others No. 5-A Davis, 2,520-2,818 feet, shot, 833 bbls.

Jones County

Ungren & Frazier No. 3-D Dorsey, 2,220-32 feet, acidized, 831 bbls. in eight hours. Martin & Sons No. 4-D Dorsey, 2,194-2,207 feet, 1,474 bbls.

Pecos County

P. Broun and others No. 18 Tippett, 420-83 feet, 990 bbls. Culbertson & Irwin No. 1 Iowa Realty Co., dry and abandoned 1,829 feet, elevation 2,441 feet.

Upton County

Gulf Oil Corp. No. 7-E Sherk, 2,440-76 feet, acidized, 239 bbls.; No. 7 Sherk, 2,208-2,320 feet, plugged back to 2,202 feet, 198 bbls. oil, 35 per cent water.

Crude Prices by Gravities

	Oklahoma-Kansas	Oklahoma-Kansas	North and Central Texas	East Central Texas (Mexia district)	North Louisiana-Arkansas	Gray County, Texas	Hutchinson-Carson counties, Texas	Rodessa, Louisiana-Texas and Panola County, Texas	Conroe, Tomball, Raccoon Bend, Satsuma, Texas	Gulf Coast	Gulf Coast	West Texas except Pecos County, Lea County, N. Mex.	Mirando district, Texas	Marion County, Texas	Government Wells, Texas	Anahuac, Texas	White Castle, Louisiana	Iowa, Louisiana	Cayuga, Texas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Below 18	....	....	....	....	....	....	....	....	....	$.90	....	....	....	....	....	....	....	....	....
18-18.9	....	....	....	....	....	....	....	....	....	.92	....	....	....	....	....	....	....	....	....
19-19.9	....	....	....	....	....	....	....	....	....	.94	....	....	....	....	....	$.92	$.94	$.84	....
20-20.9	....	....	....	....	....	....	....	....	....	.96	$.95	....	$.90	....	$.90	.94	.96	.86	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.93	....	.93	.96	.98	.88	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	.96	....	.96	.98	1.01	.91	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	.99	....	.99	1.00	1.04	.94	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.02	....	1.02	1.02	1.07	.97	....
Below 25	....	$.98	....	....	$.90	....	....	$.93	....	....	....	....	....	$.90	....	....	....	....	$.88
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1.10	1.10	$.78	1.05	.92	....	1.04	1.10	.99	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	....	1.06	1.13	1.03	.92
27-27.9	....	1.04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	....	1.08	1.15	1.05	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	....	1.10	1.17	1.07	.96
Below 29	$1.06	....	$.96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	....	1.12	1.19	1.09	.98
30-30.9	1.10	1.10	1.00	1.07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	....	1.14	1.21	1.11	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	....	1.16	1.23	1.13	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	....	1.18	1.25	1.15	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	....	1.20	1.27	1.17	1.06
34-34.9	1 18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	....	1.22	1.29	1.19	1.08
Below 35	....	....	....	....	....	$.96	$.91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	1.31	.98	1.26	1.12	....	1.24	....	1.10	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	1.33	1.00	1.28	1.14	....	1.26	....	....	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	1.35	1.02	1.30	1.16	....	1.28	....	....	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	1.37	1.04	1.32	1.18	....	1.30	....	....	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	1.39	1.06	1.34	1.20	....	1.32	....	....	....
40 and over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	1.41	1.08	1.36	1.22	....	1.34	....	....	....

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Dickey, Eason, El Dorado, Empire, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Crude Oil Purchasing Co.
Columns 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—Humble Oil & Refining Co.
Column 14—Magnolia Petroleum Co.
Column 15—Sun Oil Co.
Column 16—Gulf Refining Co.
Column 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

PERSONAL

FRED K. HASKELL, of Bartlesville, Okla., general manager of the Empire Pipe Line Company, a director of the Texas Empire Pipe Line Company, vice president of the Kaw Pipe Line Company and the Texas Empire Pipe Line Company of Texas, resigned all of the above named offices, effective April 1, and will move to San Antonio, Tex., to become an independent oil operator in the Southwest Texas fields. Mr. Haskell has been with the Empire organization about 20 years.

C. H. ROBERTS, general sales manager of the South Chester Tube Company, Chester, Pa., has returned to his headquarters after spending a week in Texas on business.

C. W. SWEET, general manager of mills for the South Chester Tube Company, Chester, Pa., is in California on a business mission.

NILS T. SELLMAN, assistant vice president, Consolidated Edison Company of New York, has been elected a member of the executive board of the American Gas Association. Mr. Sellman graduated from Stevens Institute of Technology in 1913 with a degree in mechanical engineering. He entered the gas business with the Consolidated Gas Company of New York that year in the utilization department as test engineer of gas appliances. In October, 1921, he became service engineer for the American Gas Association, and later assistant secretary-manager. He devoted considerable time to the formation of the A.G.A. testing laboratory in Cleveland. He reentered the employ of the Consolidated Gas Company of New York as engineer of utilization in 1925. He was appointed assistant secretary in 1928 and later assistant vice president.

MAX DAVID, geologist, has resigned from the Sinclair Prairie Oil Company at Midland, Tex., to take a position in the geological department of the Landreth Production Company there.

E. M. CLORAN, sales engineer for the Pittsburgh Equitable Meter Company, at Pittsburgh, Pa., has been visiting active points along the Louisiana Gulf Coast and northern Louisiana territory.

L. T. BARROW, director and chief geologist for Humble Oil & Refining Company, Houston, Tex., is now en route to Europe where he will start a two months' inspection tour through foreign oil-producing fields.

G. V. D. MARX of Standard Oil Company, H. N. MARSH of General Petroleum Corporation, H. C. MILLER of the San Francisco office of the U. S. Bureau of Mines, and LESTER C. UREN of the petroleum engineering department of University of California form a special study committee on well spacing to assist the A.P.I. committee for California, consisting of W. H. BERG, vice president of Standard Oil Company of California; RALPH B. LLOYD, president of Lloyd Corporation, and L. P. ST. CLAIR, president of Union Oil Company.

DAVID H. MORGAN, head of the Diller Oil & Gas Corporation, Moline, Kans., has returned from a business trip to California.

D. B. KEMBALL-COOK, of the Shell Petroleum organization in St. Louis, Mo., has been making a tour of Mid-Continent and Gulf headquarters of the company.

J. J. SIMKINS, in the land department of the Magnolia Petroleum Company in western Kansas, was recently married to MISS RUTH M. DELOUCHE of De Quincy, Tex.

W. L. MARTWICK has been made general sales manager of the Foster Wheeler Corporation with headquarters in New York. He has been with the company over 10 years, having previously been president of the Aero Corporation which was acquired by Foster Wheeler in 1926.

P. G. REYNOLDS, independent oil operator of Dodge City and Wichita, Kans., was in Tulsa this week on business and to attend the meeting of the American Petroleum Institute. He predicted an intensive leasing and drilling campaign for southwestern Kansas this year.

R. LEE UNDERWOOD, of Wichita Falls, Tex., has been elected president of the North Texas Oil and Gas Association, succeeding R. K. KING. N. H. MARTIN was elected first vice president; P. F. GWYNN, second vice president, and J. ED ERWIN, vice president and secretary.

GLEN WOOLEY is in charge of exploration for Transwestern Oil Company in Kansas, and B. N. MOUSER is production superintendent in the Sunflower state. JACK DEARDORF is Kansas scout for the Transwestern company, which recently opened district offices in Wichita, Kans.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

The world-wide war between the Standard Oil Company and Royal Dutch and other European oil interests, which has lasted a year and a half is over and the result is better prices both in America and abroad for all oil products.

Mrs. Lyman Stewart, wife of the president of the Union Oil Company, dies in Los Angeles, Calif.

20 YEARS AGO

Prof. Erasmus Haworth, of Kansas University, predicts that the days of abundant supplies of natural gas for Kansas cities and towns are past and that the supply will be practically exhausted by 1919.

Theodore N. Barnsdall, 66, dies in Pittsburgh, Pa., following a stroke of paralysis a few days before. He was the founder of Kansas Natural Gas Company, Pittsburgh Oil & Gas Company, Union Natural Gas Corporation, and the Barnsdall Oil Company.

Henry I. Beers, 86, pioneer oil and gas man and banker, dies in Oil City, Pa. He was one of the founders of the Manufacturers Light & Heat Company.

D. C. Stewart, of Dallas, Tex., vice president and general manager of Magnolia Petroleum Company, suffers a paralytic stroke.

10 YEARS AGO

Edgar D. Davis, president of United North & South Oil Company, recently established a $1,000,000 fund to care for orphan children in Massachusetts.

Henry A. Wallace, Charleston, W. Va., has been elected president and general manager of United Fuel Gas Company and Virginia Gasoline & Oil Company.

E. I. DeGolyer, recently chosen as president of the American Institute of Mining and Metallurgical Engineers, is the first oil man to have been elected to that position.

A. J. GALLOWAY of Tulsa, vice president of the Shell Petroleum Corporation, is a New York business visitor.

E. H. FOSTER has been promoted to head of the Texas division of the legal department of Phillips Petroleum Company at Amarillo, Tex.

C. E. OLSEN, president of the Gearench Manufacturing Company, Houston, left last week for a two-weeks' business trip to California.

CARL McWADE, engineer, Continental Supply Company, Tulsa, has been transferred to the advertising and publicity department of that company at Dallas, Tex.

L. A. EBERHART, of Fort Worth, Tex., has returned home from Williamsport, Pa., where he attended the funeral of his mother, MRS. DEBORAH S. EBERHART.

JOHN ESSLEY, president of the Superior Oil Corporation, returned to Tulsa from a business visit in New York and soon afterward left for South Texas for an inspection of company properties.

HERBERT H. RICE was recently elected president of the Sweet Oil Company, Wyman, Mich.; MAX PRAY, general manager; HARRISON T. WATSON, secretary-treasurer, and RILEY TIFT, assistant treasurer. The company is a refiner with a plant at Wyman.

E. M. TAYLOR, Kinsley, Kans., was elected president of the Kansas Oil Men's Association at the annual meeting in Wichita last week. He succeeded R. L. KENT, Salina. C. A. ELMBERG, Eldorado, was elected treasurer. WALTER E. BROWN, counsel for Sinclair Refining Company at Kansas City, Mo., one of the principal speakers at the meeting, discussed "Taxes and Legislation."

PARAGRAPHS

G. M. JACKSON, representative of the Fluor Corporation, Ltd., of California, has been transferred to New York and has opened a branch office in the Canadian-Pacific Building.

S. A. PACKARD, of Shreveport, La., has been promoted to head of the geological department of the Arkansas-Louisiana Gas Company and affiliated companies, with headquarters in Shreveport.

PAUL H. GRIMM, one of California's first oil umpires, has resigned as president of Pacific Western Oil Company to become president of a new company to be organized by him and several associates. He is also resigning as director of Tide Water Associated Oil Company. The new company will engage in development work in California, Texas and New Mexico.

MISS SARA JANE PHILLIPS, daughter of MR. and MRS. FRANK PHILLIPS of Bartlesville, Okla., became the bride of FRANK WILLIAM BEGRISCH in the Phillips suite at the Hotel Ambassador in New York on February 18, just 40 years to the day and hour after the wedding of the bride's parents. MISS BETTY JANE PHILLIPS, daughter of JOHN G. PHILLIPS of Houston, Tex., attended the bride. Mr. and Mrs. Begrisch will reside in New York after a trip to Bermuda.

M. A. HALSEY, C. F. CALDWELL and J. F. SHALLENBERGER, all of Tulsa, have filed charter of incorporation in Caddo Parish, Louisiana, their newly formed company, the Scout Oil Corporation.

LOUIS BRENDEL, assistant sales manager of the Hancock valve division of Consolidated Ashcroft Hancock Company, Inc., Bridgeport, Conn., has returned from a three weeks' trip to Yucatan, Mexico. Mr. Brendel is an amateur archeologist and spent most of his time exploring the Mayan ruins at Chichen Itza and Uxmal.

SAMUEL W. SELFRIDGE, who entered the employ of Standard Oil Company in 1922 and who for several years has been assistant manager of the right of way department of that company, has been appointed manager of the right of way department with headquarters in San Francisco, Calif., succeeding ALBERT F. SHULTE, who recently retired after 35 years of active service with the company.

K. C. HEALD, of Pittsburgh, Pa., chief geologist for Gulf Oil Corporation, is recovering in Trinidad, British West Indies, from an injury received while motoring through the oil field. A passing truck, from the rear of which a section of pipe projected, made a sudden turn, and the pipe swung around, striking Mr. Heald on the head. For a time it was thought he might lose one eye, but later report said he would suffer no permanent injury from the accident.

R. E. HARDWICKE, Fort Worth, Tex., attorney, who specializes on oil and gas proration legal questions, attended the annual A.I.M.M.E. meeting in New York last week. While north, Mr. Hardwicke visited his son who is a student at Phillips-Andover, at Andover, Mass.

JOHN ALBAN, land man with Phillips Petroleum Company, has been transferred from El Dorado, Ark., to Midland, Tex.

WALTER REITZ, of Oil City, Pa., secretary of the Quaker State Oil Refining Corporation, and MRS. REITZ are enjoying a West Indies cruise.

H. BLAIN LACY, manager of the western division for Central Forging Company, is calling on distributors in the Gulf Coast areas of Texas and Louisiana.

LARRY GILNAGH, formerly in the production offices of the Gulf Oil Corporation at Fort Worth, Tex., is now traveling auditor for the company, with headquarters at Houston.

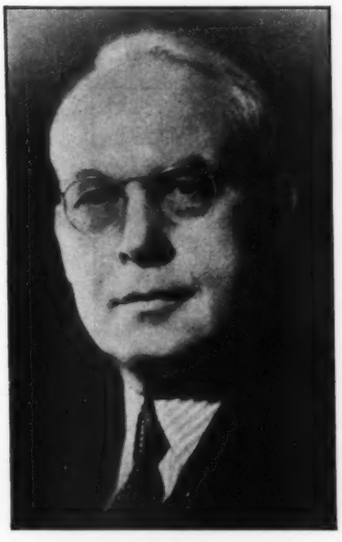
CORNELIUS SCHNURR, who for years was a district geologist for Mid-Continent Petroleum Corporation in various Texas fields, is now a consulting geologist with offices in Midland, Tex.

R. R. ROBISON, of Shell Oil Company, Los Angeles, Calif., has been appointed chairman of the California District Subcommittee of the American Petroleum Institute's Committee on the Standardization of Standard Rigs and Derricks.

J. C. HUNTER, member of the firm of Grisham-Hunter, Inc., of Abilene, Tex., was named president of the West Central Texas Oil and Gas Association at its meeting held in Breckenridge on the evening of February 20. ART FRAZIER, of Abilene, was named first vice president and RALPH A. FLEMING, of Albany, second vice president. PAUL W. PITZER, of Breckenridge, is the retiring president. G. K. WHITNEY, of Breckenridge, with the Chemical Process Company, will serve as secretary-treasurer of the association until a permanent one is chosen by the new president.

Kerosene and a Buggy

When Charles M. McLean, new president of the Canfield Oil Company, Cleveland, Ohio, joined that organization 42 years ago the automobile had not arrived, gasoline was a nuisance and the chief product of the refinery was kerosene, universally used for lighting purposes. Young McLean entered the selling department and soon was covering small towns in northern Ohio, making his rounds with a horse and buggy. Many of his customers in those days were keepers of village stores, where folk came and got their kerosene cans filled from a barrel. A small potato was a convenient plug for the spout of the can.



CHARLES M. McLEAN

With the advent of the automobile Canfield expanded its operations, and greater responsibilities were placed on young McLean's shoulders. The company established a refinery in Coraopolis, Pa., in addition to the one in Cleveland. It opened distributing stations not only in Cleveland, but in many other Ohio cities. Mr. McLean was placed at the head of the jobbing sales department, with accounts throughout the country. Then he was advanced to vice president in charge of sales.

Mr. McLean is the third president of Canfield. The first was George R. Canfield, who founded the organization in 1886. He was succeeded in 1920 by Louis Carruth, who died last December. Mr. McLean succeeds Mr. Carruth. With his wife and daughter he resides in Shaker Heights, a Cleveland suburb, going to Florida for the winters.

W. R. LEARD, petroleum engineer, Magnolia Petroleum Company, Dallas, Tex., was a Tulsa visitor last week.

J. C. MAXWELL, independent operator of Fort Worth, Tex., underwent an appendectomy February 18.

CHARLES B. McCLINTOCK, petroleum engineer, of Oil City, Pa., is spending several weeks in Colorado and Wyoming.

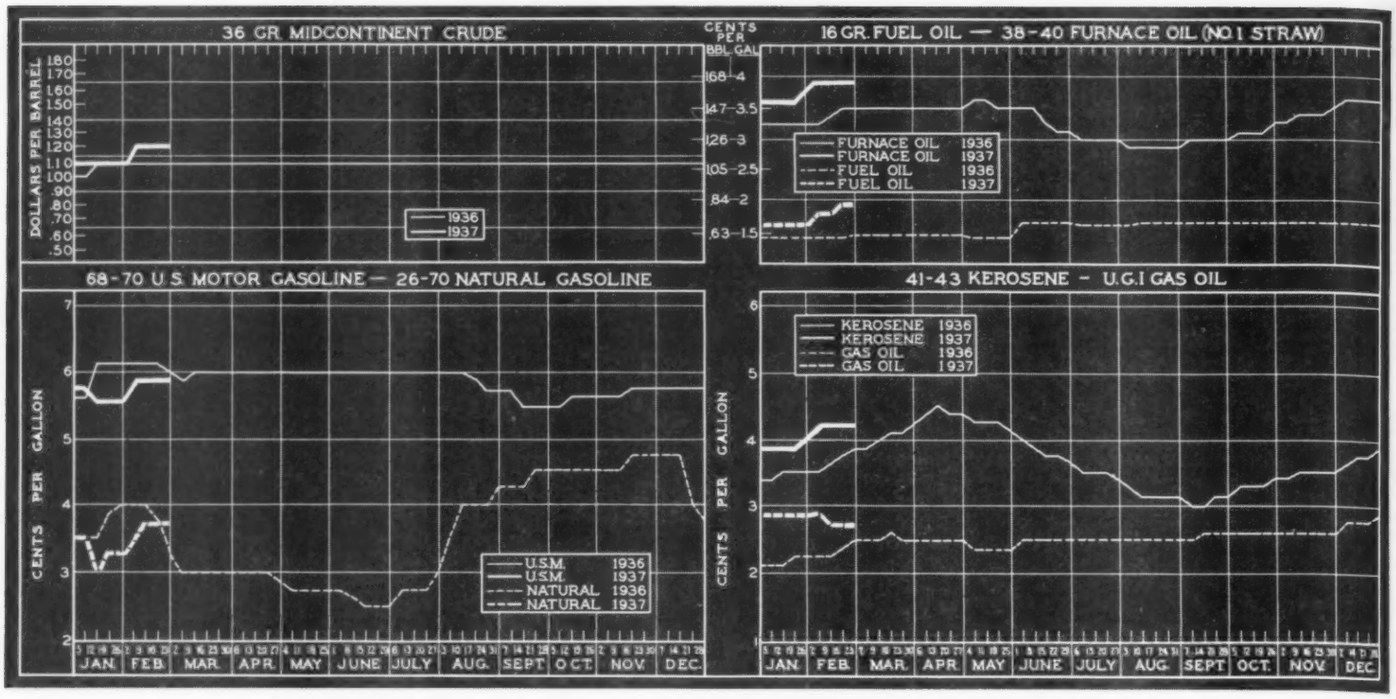
R. D. ALLEN is representing Williams Brothers & Hass, Inc., in the recently opened office at 859 Subway Building, Los Angeles, Calif.

W. D. AMBROSE and family, of Fort Worth, Tex., have left for Salt Lake City, Utah, to visit and observe the Midwinter sports in that city.

E. L. SMITH, late of the Findlay, Ohio, headquarters of the Ohio Oil Company, has been transferred to the land department in the Tulsa offices of the company.

L. I. YEAGER, who has been district geologist for Empire Oil & Refining Company in Kansas, has been transferred to a similar position in West Texas and New Mexico. Z. E. STUKEY was transferred from Oklahoma City, Okla., to Wichita, Kans., succeeding Mr. Yeager in Kansas.

ELLIOTT J. JOHNSON, who has been serving the U. S. government as ordinance engineer with the navy for the past four years, has returned to his old post as advertising manager for the Homestead Valve Manufacturing Company at Coraopolis, Pa. A background of mechanical engineering received at Carnegie Institute of Technology, and early training at Westinghouse Electric & Manufacturing Company, prepared Mr. Johnson for his work in the industrial advertising field. He is a past president of the Industrial Advertising Council of Pittsburgh, Pa.



Representative Mid-Continent Quotations on Crude Oil and Refined Products. Basis Oklahoma (Group 3)

Gasoline in Group 3 Slightly Firmer While Awaiting Better Weather

By T. F. SMILEY

A somewhat firmer tone was observable in the Group 3 market this week, with tankcar prices reaching for higher levels. The better character of the buying extended to third-grade material, substantial volumes of which were being disposed of at 5 cents. The regular grade was sturdier, with quotations showing a lessened disposition to dip.

Following the action of Standard of Indiana last week in raising its dealer and tank-wagon prices .3 cent, the Continental Oil Co. announced an advance of one-half cent. Other companies in Oklahoma and Kansas took similar steps, although there was no unanimity as to the wisdom of it.

NOT TRYING TO GET BUSINESS

Refiners generally assert tankcar prices of gasoline are out of line with the cost of crude, and inquiry indicated that few if any large operators were soliciting business at current quotations. They say they would rather store the material on the likelihood of disposing of it later at a profit. Observers expressed the opinion that the present tankcar prices are likely to stand just about as they are until favorable motoring weather prevails over a large territory. They point out that regardless of how profitless gasoline operations may be right at this juncture, tremendous additions to stocks are being recorded each week.

The spread between minimum and maximum quotations for gasoline in the 63- to 67-octane bracket continues to be wide, although it narrowed a bit in the last week. Some brokers are understood to be seeking outlets for material with an octane rating above 62, but barely reaching 63 and thus lying in the borderland between the third-grade and middle-grade classifications. A buyer who accepts it as middle-bracket gasoline usually pays little more than he would have to for third-grade. This operates to keep the minimum quotation at a low point. At the same time some refiners with 67-octane material on their hands, and no storage facilities, are able to command prices only a little under those obtainable for regular-grade material. These two situations have the effect of putting extra space between the low and high quotations.

The wide range of bids submitted by Mid-Continent refiners for government gasoline contracts stirred interest this week. This gasoline is to be 68-octane or higher, conforming to U. S. Motor specifications, with deliveries over April, May and June. Among the bids, f.o.b. refinery, were 6, 6¼, 7, 7 19/100, and 7 9/10 cents a gallon.

Refined Oil Market Barometer

Gasoline is weak at some points, but improved motoring conditions in widening areas are expected to serve as a corrective. Although mounting stocks are causing some uneasiness, there is a growing feeling that they will be disposed of in the approaching period of heavy consumption. Heavy fuels continue scarce and extremely strong. Kerosene vigorous.

MID-CONTINENT. Gasoline steadier. Kerosene, heating oils and heavy fuels strong. Wax firm.

EAST COAST. Higher tankcar gasoline prices fail to hold in some areas. Heavy fuels strong.

GULF COAST. Kerosene and gasoline strong. Lubricating oils weak.

CALIFORNIA. Fuel oil and diesel firm. Natural gasoline easy. No price changes.

PENNSYLVANIA. Gasoline soft. Bright and steam-refined stocks and wax strong.

CHICAGO. Kerosene tight. Gasoline dull.

Industrial concerns and railroads continued their scramble for heavy fuels in a barren market, with the result that prices showed no sign of slipping from the heights to which they recently have soared. Operations of some large industrial plants are reported to have been stepped up to such a point that the supplies of fuel, obtained on contract, are inadequate. These plants now are turning to the open market, only to find refiners themselves trying to get fuel oil from other refiners in an effort to satisfy the appeals of their own customers. Railroads, finding themselves short, are picking up supplies wherever they find them.

Furnace oils have lost little of the vigor which has characterized them for weeks, notwithstanding a relatively mild winter. Jobber buying is notably active, leading to the belief that many jobbers did not build up such stocks during the period of low prices as had been supposed. Prime-white distillate and No. 1 straw were particularly strong.

KEROSENE STILL STRONG

Kerosene was in even better position than last week. Many refiners do not have a gallon that is not needed to fill contract requirements. Some softening of the market soon is regarded as inevitable, since refiners, in keeping with the sensonal program, will discontinue manufacture of furnace distillates and turn to kerosene, for which there will be a substantial, though not clamorous agricultural demand. Tractor fuels were firm.

Natural gasoline showed no disposition to hop out of the rut in which it has been moving for the last three weeks. Domestic demand was cleaning up all the current supply that is not committed to contracts. Export buyers are not interested in natural at the present price levels. The trade is optimistic. Just as 1936 was a better year than 1935, so 1937 is expected to be better than 1936, with price conditions more stable.

East Coast Market Long Range View Reported to Be More Favorable

By H. STANLEY NORMAN

NEW YORK, Feb. 23.—Despite inability of refiners to sustain their half-cent tankcar advance on gasoline in certain "low-pressure" areas in New Jersey and Pennsylvania, exhaustion of the winter season inclines most marketers to regard the general market more favorably over a longer range. Viewed in light of a predicted consumption increase of 8.06 per cent in gasoline during 1937, the present stocks are not considered alarming.

Around Newark and now including Essex, Hudson, Bergen and Union counties in New Jersey, gasoline prices have been in ragged condition for 10 days. Most tankcar marketers in that district failed to meet the half-cent advance or held to the higher prices only a few days and consequently the trend has been inclined to sluggishness.

Heavy fuel oils riding on the crest of expanded industrial demand and heavy consumption by shipping interests are exceptionally strong while light furnace oils and kerosene have suffered correspondingly from the continued mild winter temperatures.

In the Pennsylvania refining district, cylinder stocks continued to enjoy active demand at prices from a half to a full cent per gallon higher than generally quoted at the start of the month. Supply of cylinder stocks is none too abundant and part of the material now held in storage is committed to fill previously placed orders and refiners are simply awaiting shipping instructions.

Gasoline and gas oil remained the leaders in the Gulf Coast district with both products in demand by export traders. One foreign purchaser contracted for a cargo of 30 plus translucent gas oil at 4 cents per gallon for prompt loading. Numerous other inquiries were in the market for gas oil for delivery during the summer months of April, May and June, normally the slack season on this material from a domestic consumption standpoint. With export interest manifested in gas oils, it is possible that normally heavy surpluses of these materials may be avoided to some extent this summer, although refiners probably will be inclined to hold prices at high levels. The surplus carried over from the closing winter season, a period of lower than anticipated consumption, may help in supplying the foreign demand without weakening the domestic relationship appreciably. Although no open cargo sales of gasoline have been reported since that of 64-66, 375 endpoint material at 6 cents, f.o.b. Gulf Coast, the market is strong and the tendency is to higher prices.

Gulf Coast refiners are generally quoting from 6⅛ to 6¼ cents per gallon for 65 octane and above to a peak of 6⅜ cents for 68-70 material. Weather conditions in the north Atlantic district, extending into the New England states, have been such this winter that only a few days have interfered with normal car operation. The heavier than anticipated demand from northern contract customers has maintained Gulf Coast gasoline prices in firm condition throughout the winter. Hardly more than three days for the entire winter could be considered as actually interfering with normal automobile operations in New York. January and February gasoline consumption has far exceeded expectations of market observers. Even under the most severe weather conditions imaginable for remainder of the winter season, market observers feel that gasoline could enter the summer period in healthy condition.

The half-cent advance was being maintained in New York at the close of the week, but those in touch with conditions admitted that almost immediate correction of New Jersey conditions would be required to prevent its spread. Strong position of the Gulf Coast market together with prevailing high tanker charter rates are factors holding the independent suppliers in line. However, there were occasional reports that the tankcar price of 6¾ cents per gallon for unbranded products in New York territory is being shaded occasionally.

The kerosene and light fuel oil market is growing less active in New York harbor area. Jobbers are buying small lots only to meet their immediate requirements, fearing that prevailing mild temperatures will continue to summer and leave their plants burdened with unwieldy inventories.

Kerosene and to a lesser extent light fuels were accorded more interest in western Pennsylvania last week. Demand from the Ohio River flood area was being met to a greater than normal extent by Pennsylvania refiners. Plants within the flooded district are still handicapped either by water damage to their refinery equipment, or by transportation to and from supplies. The clean-up work and emergency utility requirements probably will sustain at least part of the kerosene and light fuel oil demand from western Pennsylvania for several weeks.

Export shipments of dark cylinder stocks has reduced supply in Pennsylvania to levels below demand. With diminishing inventories, most offerings of 600 steam refined and 630 flash were at advances of a cent more per gallon. The demand was such that higher prices apparently did not increase sales resistance and sales were reported brisk during the entire week. Bright stocks are also in good demand. Neutral is unchanged, although offerings were reported inclined to the liberal side of the market.

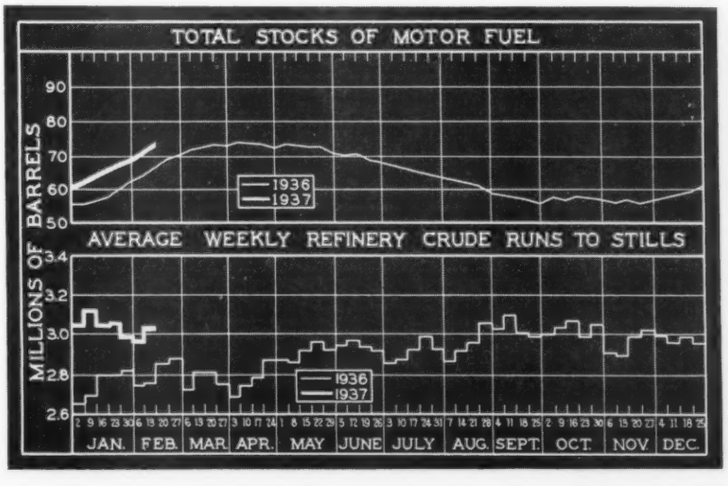
Crude scale wax prices moved slightly higher in the New York export market and also in the Pennsylvania district. Most sales in the New York area were at 2.65 cents per pound for 122-124 and 124-126 white scale. Purchasers for domestic and export business were active. Their efforts to purchase for future delivery were largely refused by refiners. Most suppliers said they were unwilling to quote present prices for future delivery. Conditions were the same in Pennsylvania.

Prices and business on fully refined waxes were generally unchanged. Kerosene tank-wagon prices were reduced 2 cents per gallon February 12 by Standard Oil Co. of Louisiana in New Orleans, La., territory, while the same material was raised a half cent at Lake Charles, La., on February 10.

A. P. I. Weekly Refinery Statistics

Week Ending February 20, 1937

Refinery figures for week ending February 20 not available, due to Washington Birthday holiday.



Extension of Time for Ethyl Test Granted

NEW YORK.—Methods of test to determine knock rating of gasoline marketed under Ethyl Gasoline Corp. and licensees agreements will remain unchanged at least until March 31, 1937.

Over the signature of E. W. Webb, president of the Ethyl corporation, a letter went forward last week to all licensees announcing that a previous postponement of 90 days from Nov. 17, 1936, has been extended an additional interval until March 31, 1937. The letter explained Ethyl and licensees' laboratories have been actively cooperating on methods of testing seeking a satisfactory single method of knock rating, much valuable information has been accumulated and satisfactory settlement is indicated.

"However, in view of the fact this method is not perfected and some further experience with it by those concerned seems indicated, we hereby extend until March 31, 1937, the postponement above referred to," Mr. Webb wrote.

RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of February 23, 1937

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dir.	Inc. tax	tank-wag.
Chicago, Ill.	16.0	14.0	4.0	10.1
Decatur	16.0	14.5	4.0	10.1
Joliet	16.0	14.5	4.0	10.1
Peoria	16.0	14.5	4.0	10.1
Quincy	15.8	14.3	4.0	9.9
Davenport, Ia.	16.0	14.5	4.0	10.1
Des Moines	15.8	14.3	4.0	9.9
Mason City	16.2	14.7	4.0	10.3
Sioux City	16.0	14.5	4.0	10.1
Duluth, Minn.	16.8	15.3	4.0	10.9
Mankato	16.4	14.9	4.0	10.5
Twin Cities	16.4	14.9	4.0	10.5
La Crosse, Wis.	17.4	15.9	5.0	10.5
Green Bay	17.7	16.2	5.0	10.8
Milwaukee	17.3	15.8	5.0	10.4
Detroit, Mich.	15.1	13.6	4.0	9.8
Grand Rapids	16.5	15.0	4.0	10.9
Saginaw	16.3	14.8	4.0	10.7
Evansville, Ind.	17.5	16.0	5.0	†10.6
Indianapolis	17.7	16.2	5.0	†9.6
South Bend	17.9	16.4	5.0	†9.6
Fargo, N. Dak.	17.4	15.9	4.0	11.5
Minot	18.6	17.1	4.0	12.7
Huron, S. Dak.	17.8	16.3	5.0	10.9
Kans. City, Mo.*	15.4	13.9	4.0	8.9
St. Louis*	15.7	14.2	4.0	9 8
St. Joseph*	15.4	13.9	4.0	9.5
Wichita, Kans.	14.9	13 4	4.0	8.9

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
Atl'tic City, N.J.	13.0	11.5	4.0	8.0
Newark	12.5	11.5	4.0	8.0
Annapolis, Md.	15.1	13.6	5.0	10.0
Baltimore	14.5	13.0	5.0	9.0
Cumberland	16.9	14.4	5.0	10.0
Wash'g'n, D.C.*	12.5	11.0	3.0	9.0
Danville, Va.	17.7	15.2	6.0	12.3
Norfolk	16.5	14.0	6.0	11.5
Petersburg	16.9	14.3	6.0	11.7
Richmond	16.8	14.3	6.0	11.7
Roanoke	18.0	15.5	6.0	12.9
Charles'n, W. Va.	16.3	13.8	5.0	12.6
Parkersburg	15.6	13.1	5.0	11.2
Wheeling	15.5	14.0	5.0	12.2
Charlotte, N. C.	18.9	16.4	7.0	12.6
Hickory	19.4	16.9	7.0	13.0
Mt. Airy	19.2	16.7	7.0	12.8
Raleigh	18.5	16.0	7.0	12.1
Salisbury	19.0	16.5	7.0	12.7
Charleston, S. C.	17.5	15.0	7.0	11.1
Columbia	18.5	16.0	7.0	12.1
Spartanburg	19.2	16.7	7.0	12.9

*Standard of N. J. has discontinued posting service-station prices at all above points except at Washington where a station price of 16 cents is in effect.

Price basis to commercial consumers, effective Nov. 2, 1936, in New Jersey, Maryland, District of Columbia and small portion of Virginia: On deliveries of 500 gallons or more by hose connection, consumer tankcar price plus .5 cent; less than 500 gallons, plus .75 cent, not taking deliveries by hose connection, plus 1 cent.

Effective Jan. 7, 1937, in greater portion of Virginia and in West Virginia differential above tankcar price on yearly purchases: up to 35,999 gallons, 2.5 cents over tankcar; 36,000 to 119,999 gallons, 2.0 cents; 120,000 to 239,999 gallons, 1.5 cents; 240,000 to 479,999 gallons, 1 cent; over 480,000 gallons .5 cent over tankcar price.

Effective Jan. 25, 1937, in North and South Carolina: Deliveries of 50 gallons or more by tank-wagon billed at price 2 cents over posted consumer tankcar price in effect at time and place of delivery. Deliveries less than 50 gallons billed at price .6 cent over posted tankcar price. Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline			Kero
	Tank wag.	Net dlr.	Inc. tax	tank-wag.
Atlanta, Ga.	21.5	18.5	7.0	*14.5
Augusta	20.5	17.5	7.0	*14.0
Macon	21.0	18.0	7.0	*14.5
Savannah	19.5	16.5	7.0	*13.0
Birm'ham, Ala.	22.0	19.0	8.0	13.0
Mobile	20.0	17.0	9.0	12.0
Montgomery	23.0	20.0	9.0	14.0
Jackson, Miss.	21.0	18.0	7.0	*13.0
Vicksburg	20.5	17.5	7.0	*13.0
Jacksonville, Fla.	20.0	17.0	8.0	12.0
Miami	20.0	17.0	8.0	12.5
Pensacola	22.5	19.5	9.0	13.5
Tampa	21.0	18.0	8.0	12.0
Lexington, Ky.	19.0	16.0	6.0	11.0
Covington	18.5	15.5	6.0	11.0
Louisville	19.0	16.0	6.0	10.0
Paducah	19.0	16.0	6.0	10.0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1 cent state tax. Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon. Pensacola, and Tampa, Fla., have a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Dealer	Serv. sta.	Inc. tax	tank-wag.
Denver, Colo.	17.0	....	5.0	11.0
Grand Junction	19 5	....	5 0	15 0
Pueblo	15.0	....	5.0	10.0
Casper, Wyo.	17.5	....	5.0	11.5
Cheyenne	17 5	....	5.0	13 0
Butte, Mont.	19.5	....	6.0	14.5
Billings	21.0	....	6.0	14.5
Helena	21.0	....	6.0	14.5
Great Falls	21.0	....	6.0	14.5
Salt Lake, Utah	19 0	....	5.0	16 0
Twin Falls, Ida.	21.0	....	6.0	18.0
Boise	20.5	....	6.0	18.0
Albu'que, N. M.	17.0	....	6.5	12.0

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero
	Tank wag.	Serv. sta.	Inc. tax	tank wag
Ohio points	18.0	(†)	5.0	*13.5

*Includes state tax of 1 cent.

†Following the leasing of service stations to dealers at many points the company no longer posts a statewide service station price.

Pacific Coast Territory

STANDARD OIL CO OF CALIFORNIA

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
San Francisco	17.0	18.0	4.0	11 5
Los Angeles	16 5	17.5	4.0	9.0
Fresno, Calif.	18.0	19.0	4.0	12.0
Phoenix, Ariz.	20.5	21.5	6.0	‡16.4
Reno, Nev.	19.5	20.5	5 0	13.0
Portland, Ore.	19.5	20.5	6.0	13.5
Seattle, Wash.	19.5	20.5	6.0	13.5
Tacoma	19.5	20.5	6.0	13.5
Spokane	22.5	23.5	6.0	16.5

‡Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
Albany, N. Y.	13.5	12.0	4 0	7.75
*Met. N. Y.:				
Manh't'n, Br'nx	13.5	12.0	4.0	7.25
State Island	13.75	12.0	4.0	7.25
Q'ns & Brklyn	13.5	12.0	4.0	7.25
Buffalo	14.3	12.67	4.0	8.25
Rochester	14.3	12.74	4.0	8.25
Syracuse	14.3	12.7	4.0	8.75
Boston, Mass.	13.5	12.0	4.0	7.50
Portland, Me.	15.3	13.0	5.0	7.75
Manch'ter, N. H.	15.8	13.5	5.0	8.00
Burlington, Vt.	15.4	13.4	5.0	8.75

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 35,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point: Monthly purchases under 5,000 gallons, pay divided dealer tank-wagon price at delivery point.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
Philadelphia, Pa.	14.0	12.5	5.0	10.5
Pittsburgh	15.5	13.5	5.0	11.0
Allentown	14.5	13.25	5.0	11.0
Erie	14.5	13.0	5.0	11.0
Scranton	14.5	13.25	5.0	11.0
Altoona	15.5	13.5	5.0	11.0
Dover, Del.	14.5	....	5.0	11.0
Wilmington	13.5	....	5.0	11.0
Springf'd, Mass.	13.8	....	4.0	7.5
Worcester	14.3	....	4.0	8.0
Hartford, Conn.	13.6	....	4.0	7.5
NewHaven	13.5	....	4.0	8.0
Providence, R.I.	12.5	....	3.0	7.5

Atlantic has transferred all stations to dealers except in Philadelphia and Pittsburgh where prices are 17.5 and 20.0 cents per gallon respectively.

Price basis to undivided dealers—Dealer tank-wagon less .5 cent per gallon.

Consuming accounts not under contract—when made by tank-wagon in quantities of 50 gallons or over, dealer price.

Commercial accounts under contract—annual consumption 2,500 to 100,000 gallons per year, 1 cent above posted tankcar price; over 100,000 gallons per year, .5 cent above posted tankcar price.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Omaha	18.4	16.9	6.0	10.1
McCook	19.1	15.3	6.0	10.8
Norfolk	18.8	17.3	6.0	10.5
North Platte	19.2	17.7	6.0	10.9
Scotts Bluff	19.9	18.4	6.0	10.6

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
N. Orleans, La.	20.0	17.5	*10 0	†11.0
Baton Rouge	18.0	15.5	8.0	12.0
Alexandria	18.5	16.0	8.0	12.0
Lafayette	19.0	16.5	8.0	12.5
Lake Charles	19.0	16.5	8 0	12.5
Shreveport	17.5	15.0	8.0	11.0
Knoxville, Tenn.	21.0	18.5	8 0	14.0
Memphis	19.0	16.5	8.0	12.0
Chattanooga	20.5	18.0	8.0	13.5
Nashville	20.0	17.5	8.0	13.0
Bristol	19.75	18.5	8.0	14.5

*Includes 2-cent parish tax. †Includes 1 cent parish tax and 1 cent state tax.

Standard of La. has transferred all stations to dealers except in New Orleans and Baton Rouge where station prices are 23.5 and 21.5 cents per gallon, respectively.

Price basis to commercial consumers: effective Dec. 21, 1936, deliveries of 50 gallons or more in one delivery, posted consumer tankcar price plus 2 cents per gallon; consumers taking deliveries of less than 50 gallons at one time pay posted consumer tankcar price plus 6 cents per gallon.

Louisiana kerosene prices include 1-cent state tax.

Naphtha

STANDARD OIL CO (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 160 gallon lots if covered by contract.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Dealer	Serv. sta.	Inc. tax	tank-wag.
Muskogee, Ok.	15.5	....	5.0	7.0
Okla. City	14.0	....	5.0	8.0
Tulsa	15.5	....	5.0	8.0
Ft. Smith, Ark.	15.0	..	5.0	10.0
Little Rock	17.5	....	7.5	9.5
Texarkana	15.0	....	5.0	9.0

Texas

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.5	18.5	5.0	8.0
San Antonio	14.5	18.5	5.0	8.0

Tank-wagon price is to contract dealers and commercial consumers, the price to open dealers being .5 cent above tank-wagon price.

Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
Hamilton, Ont.	22.0	....	6.0	17.0
Toronto, Ont.	22.0	24.5	6.0	17.0
Brandon, Man.	29.8	32.8	7.0	22.3
Winnipeg, Man.	28.2	31.2	7.0	20.7
Regina, Sask.	29.5	....	7.0	22.0
Saskatoon, Sask.	32.3	....	7.0	24.8
Edmonton, Alta.	30.5	33 5	7.0	24.3
Calgary, Alta.	28.0	31.0	7.0	21.5
Vancouver, B. C.	22.0	26.0	7.0	23.0
Montreal, Que.	19.0	....	6.0	17.5
St. John, N. B.	24.0	28.0	8.0	18.5
Halifax, N. S.	24.0	28.0	8.0	18.5

*Imperial gallon used in Canada.

Discount to dealers: Divided dealers pay 3 cents per gallon below station price; undivided dealers pay 4 cents per gallon below station price except in cities of Hamilton, Toronto and Montreal when discounts below station prices are one-half cent per gallon less and in Vancouver where discounts are 1 cent per gallon more.

Retail Price Changes

Standard Oil Co. (Indiana) February 17 advanced tank-wagon and dealer gasoline .3 cent at all points in Illinois, Iowa, Minnesota, Wisconsin, Indiana, North and South Dakota, Missouri and Kansas; February 23 advanced tank-wagon kerosene 3 cent at all points.

Standard Oil Co. of New Jersey February 13 reduced tankcar and dealer gasoline .2 cent in Cumberland.

Standard Oil Co. of Nebraska January 26 reduced dealer gasoline 2.3 cents in McCook, Neb.; February 17 advanced tank-wagon and dealer gasoline .3 cent at all Nebraska points.

Standard Oil Co. of Louisiana February 10 advanced tank-wagon kerosene .5 cent in Lake Charles; February 12 reduced tank-wagon kerosene 2 cents in New Orleans.

Continental Oil Co. February 15 reduced dealer gasoline 2 cents in Oklahoma City; February 18 advanced dealer gasoline .5 cent in Tulsa and Muskogee.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of February 23, 1937

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below (3d gr.)	.04¾	.05
63-67 octane	.05⅛	.05½
68-70 octane (regular)	.05⅞	.06
60-62 400 grades:		
62 octane and below (3d gr.)	.04¾	.05
63-67 octane	.05⅛	.05½
68-70 octane (regular)	.05⅞	.06
64-66 375	.05	.05¼
68-70 360	.05⅛	.05⅜

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04⅝	.04¾
63-67 octane	.05	.05¼
68-70 octane (regular)	.05⅜	.05⅝
60-62 400	.04¾	.05
64-66 375	.05	.05¼

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
62 octane and below	.05⅛	.05¾
63-67 octane	.05⅝	.06¼
68-70 octane (regular)	.06¼	.06½

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below	.05⅛	.05¾
63-67 octane	.05¾	.06¼
68-70 octane (regular)	.06¼	.06½

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04¾	.04⅞
63-67 octane	.05⅛	.05¼
68-70 octane (regular)	.05⅝	.05⅞
60-62 400 grades:		
62 octane and below	.04¾	.04⅞
63-67 octane	.05⅛	.05¼
68-70 octane (regular)	.05¾	.05⅞
64-66 375	.05	.05⅛
68-70 360	.05¼	.05½

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.05⅛
60-64.9 octane	.06¾	.07
65-70 octane	.07	.07¼
64-66 375		.05½
68-70 350		.05¾

CALIFORNIA (domestic movement)—

54-55 U. S. Motor	.07	.08
58-60 400, 65 octane and higher	.07¾	.08¾

EAST COAST (domestic)—

U. S. Motor below 60 octane:		
*New York (Bayonne)		.06¾
Baltimore		.06¾
U. S. Motor, 60-64.9 octane:		
*New York (Bayonne)		.07
Philadelphia	.07	.07¼
Boston		.07¼
Baltimore	.07	.07¼
Charleston, S. C.		.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)		.07¼
Philadelphia	.07¼	.07½
Boston		.07½
Baltimore	.07¼	.07½
Charleston, S. C.		.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05½	.05⅝
60-64.9	.05⅝	.06
65 octane and higher	.06⅛	.06⅝

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)	.05	.05⅛
52-54 450 (blending)	.05	.05⅛
54-56 450 (blending)	.05⅛	.05¼

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.03¾
Grade 18-55		.04½
Low vapor pressure grade:		
*14-pound v.p. (max.)	.05	.05⅛
*12-pound v.p. (max.)	.05½	.05¾

*Nominal.

NORTH TEXAS—

Grade 26-70		.03½
Grade 18-55	.04	.04¼

CALIFORNIA—

75-85 275-390	.06¾	.07½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.04¼

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.04⅛	.04¼
41-43 gr., 300-350 i.b.p., 110-125 flash, 500-520 e.p.	.04¼	.04⅜
46-48 gr., 210-230 i.b.p., 480 max. e.p.	.04⅝	.04⅞

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04¼	.04⅜
42-44	.04⅜	.04½

NORTH TEXAS—

41-43	.04¼	.04⅜

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅜	.04½

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04⅜	.04½

PENNSYLVANIA (inland refineries)—

45	.05⅛
46	.05¼
47	.05⅜

CHICAGO (Based on Group 3)—

41-43	.04⅛	.04¼
42-44	.04¼	.04⅜

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.03¼	.04¼

NEW YORK (Bayonne, N. J.)—

41-43	.05⅜

*GULF COAST (domestic)—

41-43	.05½

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.04	.04¼
No. 1 straw, 38-40	.03⅞	.04
No. 2 straw, 32-36	.03⅝	.03¾
No. 2 dark, 32-36	.03½	.03⅝
No. 3, zero to 15, 28-32	.03½	.03⅝
No. 3, 15 and above, 28-32	.03	.03⅛

NORTH TEXAS—

No. 1 prime white, 38-42	.04
No. 1 straw, 38-40	.03⅞

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03½	.03⅝

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03½	.03⅝

CHICAGO (Based on Group 3)—

No. 1 prime white, 38-40	.04	.04⅛
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03⅝	.03⅞
No. 2 dark, 32-36	.03½	.03¾
No. 3, zero to 15, 28-32	.03½	.03¾
No. 3, 15 and above, 28-32	.02¾	.02¾

NEW YORK (Bayonne, N. J.)—

*No. 1	.05¾
*No. 2	.05
*No. 4	.04¾

*Barge deliveries one-eighth to one-fourth cent under above, tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02¾	.03
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.87½	.92½
No. 5, low cold test, 18-22	.85	.90
Below 18 fuel oil, industrial	.80	.85

NORTH TEXAS—

U.G.I. gas oil	.02¾	.03
No. 4, low cold test, 24-28	1.10	1.15
No. 5, low cold test, 18-22	.85	.90
Below 18 fuel oil, industrial	.80	.85

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.77½	.85

ARKANSAS (Ark., N. La., Miss. del.)—

10-14 fuel oil, industrial	.70	.72½

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.87½	.92½
No. 6, low cold test, 10-16	.80	.85

PENNSYLVANIA (inland refineries)—

36-40	.04⅝	.04½

CALIFORNIA—

Los Angeles:		
30-34 gas oil, per bbl.	1.00	1.25
24 plus diesel	1.00	1.25
24 plus diesel (bunkers)	1.15	1.35
12-16 (bunkers at tidewater)	.90	1.00
10-16 (cargo lots)	.75	.95
12-17 (tankers)	.75	.95
San Joaquin Valley:		
10-18 (tankcars)	.75	.90
24 plus diesel, per bbl.	1.00	1.35
San Francisco:		
27 plus diesel		1.40
24 plus diesel (bunkers)		1.40
10-16 (bunkers)		1.00

GULF COAST—

28-30 gas oil	.03½	.03⅝
28-30 diesel (bunkers)		1.65
Bunkers (bulk cargoes)		.95
Bunker C ((bunkers)		1.00

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¾
28-30 diesel (lighterage 6¼c per bbl.)		1.85
28-30 diesel (tankcars)		.04¾
*Bunker C (to ocean-going ships in N. Y. harbor)		1.15
Industrial fuel (tankcars)		.04½

*Lighterage charge 5c bbl. additional.

Bright and Steam-Refined

OKLAHOMA (Group 3)—

Bright Stocks:		
190-200 D, 15-25		.22
150-160 D, 0-10		.19
150-160 D, 15-25		.18½
150-160 E, 15-25		.18
100-110 D, 0-10		.17
Steam refined:		
631 green (treated)		.14½
600 dark green (untreated)		.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 145-50 at 210, 540-550 flash):		
10 pour test	.26	.26½
15 pour test	.25	.25½
20 pour test	.24	.24½
25 pour test	.23	.23½
Steam refined:		
600	.15½	.16
650	.16½	.17
600 Pennsylvania flash	.17½	.18
630 flash	.19	.19½
600 Warren E filtered	.17½	.18

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:		
150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-3½		.13
400-3½		.14
100-2½ paraffin oil		.05¾
15-20 Cold Test:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08⅛	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6		.07
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)

Pale Oils:		
100-2½-3	.07	.08
200-2½-3	.07	.08
360-2½-3	.07	.08
400-3-4	.09	.11
450-3-4	.09	.11
550-3-4	.09	.11
660-3-4	.09	.11
Red Oils:		
200-4-5	.07	.08
300-5-6	.07	.08
350-5-6	.10½	.11½
400-5-6	.10½	.11½
450-5-6	.10½	.11½
500-5-6	.10½	.11½
600-5-6½	.10½	.11½
700-6½ plus	.10½	.11½
750-6½ plus	.10½	.11½
900-6½ plus	.10½	.11½

PENNSYLVANIA—

150 vis. at 750° F. color, 400-405 flash:		
Zero pour test	.22	.22½
10 pour test	.21	.21½
15 pour test	.20½	.21
25 pour test	.19½	.20
180 vis. at 70° F., 3 color:		
25 pour test	.22	.22½
200 vis. at 70° F., 3 color:		
Zero pour test	.25½	.26
10 pour test	.24½	.25
15 pour test	.24	.24½
25 pour test	.23	.23½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02⅝	.02¾

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0265	.0270
124-126 (a.m.p.) w.c. scale	.0270	.0275

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0595
133-135 (a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0250	.0255
124-126 (a.m.p.) y.s.	.0260	.0265
Petrolatum in barrels, carload lots:		
Dark green		.01⅞
Amber	.02⅞	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07⅜	.07⅞
Cream	.05⅝	.05⅞

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.05½
60-62 400		.05⅝
61-63 390	.05⅝	.05¾
64-66 375	.05⅞	.06

LOS ANGELES—

U. S. Motor grades:		
53-55 octane		.04¾
55-65 octane	.04¾	.05
65-67 octane		.05
67-69 octane		.05¼
Above 69 octane	.05½	.06

KEROSENE

GULF COAST—

41-43 prime white	.05	.05¼
41-43 water white	.05½	.05⅝
44 water white	.05⅝	.05¾

LOS ANGELES—

41-43 water white	.04½	.05

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

Cylinder Stocks:		
600 Warren E		.24½
600 S.R. unfiltered		.22
650 S.R. unfiltered		.23½
600 flash, S.R.		.24½
630 flash S.R.		.25½
Bright Stocks:		
8 color	.29½	.30
6½ plus color in dilution	.29	.29½

NEUTRAL OIL

200-3 color		.29½
150-3 color		.26½

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
133-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude scale:		
124-126 w.s.	.0260	.0270
124-126 y.s.	.0245	.0250

Oil Man's Calendar

March

1-5—Chicago, American Society for Testing Materials, regional meeting and committee week, Palmer House.

10-11—Indianapolis, Indiana Independent Petroleum Association Spring Convention and Refiners' and Suppliers' Exhibit, Hotel Severin.

12—Oklahoma City, Okla., Interstate Oil Compact Commission meeting.

15-19—Philadelphia, Pa., National Oil Burner & Air Conditioning exposition and convention, Convention Hall, Commercial Museum.

17-19—Los Angeles, Calif., A.A.P.G. annual meeting.

23—New York, Oil Trades Association of New York.

April

1-2—Dallas, Tex., American Petroleum Institute, Southwestern District, Division of Production, Baker Hotel.

7-9—Birmingham, Ala., American Institute of Mining and Metallurgical Engineers, Open Hearth Conference.

8-10—Shreveport, La., Petroleum Industry Electrical Association.

13—Los Angeles, Calif., American Petroleum Institute, Division of Production, Pacific Coast district, Biltmore Hotel.

15-16—Cleveland, Ohio, 34th semiannual meeting National Petroleum Association, Cleveland Hotel.

26-28—Hot Springs, Ark., Western Petroleum Refiners Association, annual meeting, Arlington Hotel.

May

6-7—Columbus, Ohio, American Petroleum Institute, Division of Production, Eastern district, Deshler-Wallick Hotel.

10—Kansas City, Mo., Spring meeting Natural Gas Department, American Gas Association.

19-21—Tulsa, Natural Gasoline Association of America, annual meeting, Hotel Tulsa.

23-27—Pittsburgh, Pa., National Association of Purchasing Agents (Oil Company Buyers' Group) annual convention, William Penn Hotel.

June

1-3—Colorado Springs, Colo., American Petroleum Institute, mid-year meeting, Broadmoor Hotel

7—Kansas City, Mo., Oil Field, Gas Well-Refinery Workers of America.

10-12—Pennsylvania Grade Crude Oil Association, annual meeting, on Great Lakes S.S. "Seeandbee," sailing from Buffalo, N. Y.

11—Santa Fe, N. M., Interstate Oil Compact Commission meeting.

14-19—Paris, France, Second World Petroleum Congress, during International Exposition.

25-26—Dallas, Tex. National Oil Scouts Association, annual meeting, Baker Hotel.

June—July

28-July 2—New York, American Society for Testing Materials, fortieth annual meeting, Waldorf-Astoria Hotel, together with fourth A.S.T.M. exhibit of testing apparatus and related equipment.

October

11-16—Houston, Tex., Oil-World Exposition.

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Tulsa, Oklahoma

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Tulsa, Oklahoma

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Refinery Engineer, civil engineering graduate, 8 years' experience construction, operation, maintenance of stilling and cracking equipment. Also 4 years' experience general construction. Excellent personality, large acquaintance, conscientious worker, desires new connection with major company anywhere, either sales or engineering work. Engineers Club of Tulsa, Oklahoma.

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NINE years' experience purchasing, field material man, inventory and production clerk. Six years material and oil accounting. Address Box H-676, The Oil and Gas Journal, Tulsa, Oklahoma.

Experienced oil accountant, also acquainted with tax and claim work, wants permanent connection with reliable company; 12 years' experience. Best references. Address Box H-677, The Oil and Gas Journal, Tulsa, Oklahoma.

Refinery man—chemical engineer, 10 years' experience in refinery operations, lube oil manufacturing and blending, grease manufacturing. At present employed by major oil company. Desires new connection. Will go anywhere. Address Box H-673, The Oil and Gas Journal, Tulsa, Oklahoma.

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FOR SALE—2,000 acres producing gas, and potential oil lands, with oil and gas permits. Address Box 30, Havre, Mont.

OIL AND Gas Leases and royalty drilling blocks in South Arkansas in trend of development. Two sands now producing. John G. Wooten, P. O. Box 38, Prescott, Arkansas.

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P. O. Box 949, Hot Springs, Ark.

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WANTED—Manufacturing concern requires thoroughly experienced engineer in the design, construction and operation of refinery and gasoline plant equipment. Preferably one having sales ability. Give full details in all respects, connections over past 10 years, age, etc. Permanent if satisfactory. Replies confidential. Address Box H-674, The Oil and Gas Journal, Tulsa, Oklahoma.

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LEASES near Paluxy-Trinity sand Oklahoma Ordovician tests drilling low price 100 for one bet. E. Croft, Proctor, Texas.

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Young Jewish attorney, some means, wide business and organization experience, desires to make connection in oil business. Go anywhere. Box H-660, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED — Associate to drill some semi-proven shallow drilling blocks Central West Texas. O. W. Gray, Cross Plains, Texas.

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The Oil and Gas Journal
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INDEX TO ADVERTISERS

A

Abercrombie, J. S., Co.
Abercrombie Pump Co. 200
Air Maze Corp.
Air Reduction Sales Co.
Alco Products, Incorporated 18
Allied Steel Products Corp.
Allis-Chalmers Mfg. Co.
Allsteel Products Mfg. Co., The ... 2
American Askania Corp.
American Cable Division of American Chain & Cable Co., Inc.
American Cast Iron Pipe Company
American Iron & Machine Works 126, 127
American Lubricator Company 172
American Manganese Steel Company 136
American Meter Company
American Paper Stock Co. 200
American Roller Bearing Company 162, 163
American Rolling Mill Company ..215
American Sand-Banum Co., Inc. .. 223
American Steel & Wire Company .. 11
Armstrong Steam Trap Co.
Athey Truss Wheel Co.
Atlas Drop Forge Co. 207
Atlas Imperial Diesel Engine Co. .. 22
Atlas Supply Co.
Auer, C. L., and W. W. 169
Axelson Manufacturing Company .. 3

B

Babcock & Wilcox Tubes
Badger & Sons Co., E. B.
Badgett Steam Lubricator Corp. ..173
Bakelite Corporation
Baker Oil Tools, Inc. 148, 201
Baldwin-Southwark Corporation ...208
Baroid Sales Company 137
Barret, William M., Inc.
Barrett Company, The 28
Beaumont Iron Works Co.
Beaver Pipe Tools 200
Bemis & Call Co. 176
Berry Son's Co., James B.
Bethlehem Steel Co.
Billings & Spencer Company, The..194
Black, Sivalls & Bryson, Inc.
Boston Woven Hose & Rubber Co... 73
Braden Steel Corporation
Bradford Motor Works, Inc. 217
Brewster Company, Inc., The
Bridgeport Machine Company 65
Broderick & Bascom Rope Co. 8
Brown Instrument Co., The 15
Buckeye Traction Ditcher Co., The 226
Butler Manufacturing Co.
Byron Jackson Co. 146, 147

C

Cameron Iron Works, Inc. 150
Carnegie-Illinois Steel Corporation 193
Carson Machine & Supply Co.
Cast Iron Pipe Research Association, The
Caterpillar Tractor Co.
Central Forging Co., The 138
Chain Belt Company 14
Chaplin-Fulton Mfg. Co., The
Chapman Valve Mfg. Co., The
Chemical Process Co., Inc., The
Chicago Bridge & Iron Company..213
Chicago Rawhide Mfg. Co. 198
Chiksan Oil Tool Co., Limited 167
Cities Service Oil Co.
Clark Bros. Company
Classified Advertising 246, 247
Cleveland Trencher Company, The 218
Climax Molybdenum Company
Columbia Steel & Shafting Co. 188
Columbian Steel Tank Co.
Continental National Bank of Fort Worth 30
Continental Oil Co.
Continental Supply Company, The . 67
Cooper, Fred E.
Cooper-Bessemer Corp., The 166
Coppus Engineering Corp.
Crane Co.
Crane Packing Company 211
Crutcher-Rolfs-Cummings, Inc.
Cummins Engine Company
Curtin, W. H., and Co., The 30

D

Darling Valve & Mfg. Co. 13, 30
Davis Emergency Equipment Co.
Davis Regulator Co.
Dean Oil Tool Co.
De La Vergne Engine Co. 208
Devine, J. P., Mfg. Co., The 74
Dewey Portland Cement Co.
Dodge Mfg. Corporation 19, 171
Doheny Stone Drill Co.
Dow Chemical Company
Dowell, Incorporated 22
Dresser, S. R., Mfg. Co. 187
Duff-Norton Manufacturing Company, The 144
Dunn, C. Hobson
DuPont DeNemours & Co., Inc., E. I. 207

E

Eagle-Picher Lead Co.
Eastman Oil Well Survey Co.
Economy Electric Lantern Co. 194
Edeleanu Company, Ltd.
Edward Valve & Mfg. Co., Inc., The
Eiche, R. J.
Emsco Asbestos Company
Emsco Derrick & Equipment Company
Engineering Company, The
Ensign Carburetor Company, Ltd.
Erie Bronze Company 194
Ethyl Gasoline Corporation
Everstick Anchor Co.

F

Failing Supply Co., Geo. E.
Fairbanks, Morse & Co.
Filtrol Co. of California
Firestone Tire & Rubber Co.
First National Bank in Dallas 169
First National Bank of Fort Worth 30
First National Bank in Houston ..173
First National Bank & Trust Co., of Tulsa, The 219
Fischer Co., C. A. 180
Fisher Governor Company
Flexitallic Gasket Co. 196
Fluid Packed Pump Co.
Fluor Corporation, Ltd.
Foote Bros. Gear and Machine Co..179
Ford Motor Co. 23
Fort Worth National Bank, The .. 30
Foster Wheeler Corp.
Four Wheel Drive Auto Co., The .. 24
Foxboro Co., The 174
Franklin Valveless Engine Company 133
Frick-Reid Supply Corporation

G

Gardner-Denver Company
Garlock Packing Company, The
Gaso Pump & Burner Mfg. Co. ...202
Gasoline Products Co., The
Gates Rubber Co., The
Gatke Corporation
Gearench Mfg. Co.
General American Tank Storage and Terminal Co., Inc.
General Electric Company 63, 191
General Motors Truck Co.
General Paint Co.
General Power, Inc. 217
Geophysical Service, Inc.
Geophysical Petroleum Surveys, Inc.
Gilmer Company, L. H.
Gott, H. P., Mfg. Co. 190
Goulds Pumps, Inc.
Grant Oil Tool Company 143
Graver Tank & Mfg. Co., Inc.
Gray Processes Corporation, The ..
Great Lakes Fuel Corporation, The (Distributors for Great Lakes Coal & Coke Co.) 211
Green Head Bit & Supply Co.
Griffith Tool Works 164
Guiberson Corporation, The 185
Gulf Oil Corp.
Gulf States Utilities Co.
Gustin-Bacon Mfg. Co. 79

H

Halliburton Oil Well Cementing Co.
Hanlon-Buchanan, Inc.
Hanlon-Waters, Inc. 132
Happy Belting Company 73
Harnischfeger Corporation
Harrisburg Steel Corporation
Hazard Wire Rope Division of American Chain & Cable Co., Inc.
Heeter, C. M., Sons Co. 230
Hercules Tool Company 159
Hewitt Rubber Corp.
Hills-McCanna Co.
Hinderliter Tool Company 151, 152
Hoard Exploration Company
Hopper Machine Works, Inc.
Hough Mfg. Co., The Charles N.
Houston Oil Field Material Company
Houston Lighting & Power Co. 214
Hughes Tool Co. 128A, 128B, 128C, 128D
Humble Oil & Refining Co.
Hyatt Bearings Division, General Motors Corporation 27
Hydrauger Corporation, Ltd. 227
Hydril Co.

I

Independent Exploration Company,
Industrial Research Laboratories, Ltd. 180
Ingersoll-Rand Co. 20
International Derrick & Equipment Co., The 177
International Filter Co.
International Harvester Co. of America, Inc. 25
International Nickel Company, Inc., The 21
International Nutyp Tool Corporation 200
International Petroleum Exposition
International Supply Co.

J

J & S Carburetor Co.
Jarecki Manufacturing Company
Jeffrey Mfg. Co.
Jensen Brothers Manufacturing Co.
Jerguson Gage & Valve Co.
Johns-Manville Corporation
Johnston & Jennings Co. (Oceco Division) 181
Jones & Laughlin Steel Corporation

K

Kellogg, M. W., Company, The 1
Kennedy Valve Mfg. Co., The
Kerotest Manufacturing Co. ..134, 135
Keystone Driller Co.
Kibele Manufacturing Co. 176

L

Laminated Shim Co., Inc. 164
Landis Machine Co., The 155
Lane-Wells Co., The 80
Larkin Packer Co. 55
Layne and Bowler Co., The 60
Layne & Bowler, Inc. 237
Leach Co., C. H., Inc.
Leeds & Northrup Company
Lenape Hydraulic Pressing & Forging Co. 181
Leonard Construction Co.
Leschen, A., Sons Rope Co.
Liberty Accessories Corporation ...181
Lincoln Electric Company, The ...195
Linde Air Products Co., The 128
Linear Packing & Rubber Co., Inc.
Link-Belt Company 156, 157
Lone Star Cement Corporation
Lonergan Co., J. E. 186
Lucey Products Corporation
Ludlow Valve & Mfg. Co., The 209
Lufkin Foundry & Machine Co.
Lufkin Rule Co., The 196
Lummus Co., The
Lunkenheimer Co., The 29

Mc

McCord Radiator & Mfg. Co.
McGregor Working Barrel Company
McKissick Products 164

M

MacClatchie Manufacturing Company 189
Macwhyte Co.
Maloney Tank Mfg. Co.
Manhattan Rubber Mfg Division, The
Manzel Brothers Company 180
Marley Company, The
Marmon-Herrington Co., Inc.
Martin-Decker Corp. 190
Mason-Neilan Regulator Co.
Mathey Machine Works, C. A. 223
Mattison-Wallack & Co.
Meadville Malleable Iron Co. 188
Medart Company, The
Mepham, Geo. S., Corp.
Merco Nordstrom Valve Co.
Meriam Co., The 192
Midco Tool & Supply Co.
Midwest Piping & Supply Company, Inc., The 31
Miller Fuel Engineering Co., Inc.
Miller Sand Pump Co.
Minneapolis-Moline Power Implement Company
Mission Mfg. Co., The 130, 131
Monsanto Chemical Company
Moore, Lee C., & Co., Inc. 153
Moorlane Company
Muskogee Iron Works

N

Nathan Manufacturing Company ..199
National Airoil Burner Company ..211
National Bank of Tulsa 68
National Carbon Company, Inc.
National Lead Co.
National Supply Co., The 51
National Tank Company
National Transit Pump & Machine Co.
National Tube Co. ....Back Cover
Natural Gas Equipment Co. of Texas
Naylor Pipe Company 26
New Deal Specialty Co., The
Noble Clamp Co. 194
Non-Corrosive Products Co., Ltd. (Mfrs.)
Norvell-Wilder Supply Company ...

O

O.C.S. Mfg. Co., The
O'Bannon Co., Walter
Oceco Fittings 181
Oil Center Tool Co. 165
Oil Well Improvement Co.
Oil Well Supply Company ....Front Cover, 121, 122, 123, 124
Oil World Exposition
Oklahoma Gas and Electric Company
Oklahoma Portland Cement Co. ...
Oklahoma Rig and Supply Co. 186
Otis Pressure Control, Inc.
Owens-Illinois Glass Company 75
Oxweld Acetylene Company 128

P

Page Steel & Wire Division of American Chain & Cable Co., Inc.
Parkersburg Rig & Reel Co., The 158
Parsons Co., The Ralph M.
Parsons Company, The 223
Patterson-Ballagh Corporation 71
Penberthy Injector Co. 47
Petroleum Electric Power Club 24
Petroleum Engineering Research Co.
Petroleum Equipment Company ...
Petroleum Iron Works Company ..
Petroleum Specialty Company, The
Petty Geophysical Engineering Co.
Pittsburgh-Des Moines Steel Company
Pittsburgh Equitable Meter Co. ....Inside Front Cover
Pittsburgh Steel Company
Plymouth Cordage Company 182

P

Polymerization Process Corporation, The
Pomona Pump Co. 209
Portable Rig Co., Inc. 168
Preformed Wire Rope
Prest-O-Lite Company, Inc., The ..128
Price, Inc., H. C.
Pure Oil Co.

R

Reading-Pratt & Cady Division of American Chain & Cable Co., Inc. 7
Rector Well Equipment Co., Inc. .. 72
Reed Roller Bit Company 139, 140, 141, 142
Regan Forge & Engineering Co. ..
Reid, Jos., Gas Engine Co.
Reilly Tar & Chemical Corporation 6
Republic Steel Corporation 16, 17
Rhodes Metallic Packing Co. 192
Ridge Tool Co., The 199
Rieber Laboratories
Roebling's, John A., Sons Co.
Royal Mfg. Co. 144
Ryerson & Son, Inc., Joseph T.

S

Sacks & Co., Ed
Salem Engineering Company 178
Schlumberger Well Surveying Corporation
Schweitzer Wood Rod Co. 199
Security Engineering Co.
Shaffer Specialty Co., The
Shaffer Tool Works 145
Shand & Jurs Co. 77
Sharples Specialty Co., The
Shell
Sinclair Refining Company, Inc.
S.K.F. Industries, Inc.
Skinner Co., M. B. 175
Smith, A. O., Corporation 4, 5
Smith, Company, E. M.
Smith, Nowery J., Supply Company
Smooth-On Mfg. Co.
Sonner Burner Company, The 198
South Chester Tube Co.
Southern Alkali Corporation
Spang, Chalfant & Co., Inc. 58
Spang and Company 181
Sperry-Sun Well Surveying Co. 207
Stacy, Eugene C. 196
Standard Brake Lining Co. 201
Stahmer Shoe Co., F. H.
Star Drilling Machine Company ...226
Star Manufacturing Company
Staynew Filter Corporation
Stitt Ignition Co. 198

T

Taylor Instrument Companies
Texas Chemical Company
Thermoid Rubber Co. 197
Thornhill-Craver Co., Inc. 192
Timken Roller Bearing Company 129
Timken Steel & Tube Co.
Tnemec Company, Inc.
Toledo Pipe Threading Machine Co.209
Trackson Company
Tretolite Co. 9
Trimont Mfg. Co., Inc. 183
Trinity Portland Cement Company
Tube Turns, Inc.
Tulsa Chamber of Commerce
Tulsa Winch Mfg. Co.
Twin-Disc Clutch Co. 10
Twin-Seat Valve Co.
Tyson Roller Bearing Corp. 149

U

Union Carbide & Carbon Corporation 128
Union Carbide Sales Company 128
Union Wire Rope Corporation
United American Bosch Corp.
United States Rubber Company ..
United Supply & Mfg. Company
U. S. Steel Corp., Subsidiaries ....Front Cover, Back Cover, 11, 121, 122, 123, 124, 184, 193
Universal Atlas Cement Co. 184
Universal Oil Products Co. 48

V

Vellumoid Co., The
Vernon Tool Co., Ltd. 201
Vinson Supply Co.
Vogt, Henry, Machine Co. 12

W

Waldron Corporation, John 223
Wall Rope Works, Inc. 201
Walworth Company 154
Warren Petroleum Company
Waukesha Motor Company 179
Western Geophysical Company
Westinghouse Electric 125
Wheatley Bros.
Wheeling Machine Products Co.
Wickwire Spencer Steel Company
Williams & Co., J. H.
Williamsport Wire Rope Co.
Wilson Manufacturing Co. 160, 161
Wilson Supply Company
W. K. M. Company, Inc.
Wolcott Bldg., The
Worthington Pump & Machinery Corporation

Y

Young Engine Corp.
Youngstown Sheet & Tube Co., The ....Inside Back Cover